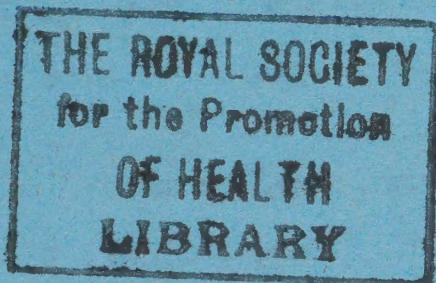


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1963

THE
TRAINING
AND EMPLOYMENT
OF
HEALTH INSPECTORS
IN
NEW ZEALAND



BOARD OF HEALTH
(under Health Act 1956)

REPORT SERIES: No. 9

Published October 1963

K23618

VD/1963

BOARD OF HEALTH

The Board is constituted under section 11, Health Act 1956, and at present comprises:

Hon. D. N. McKay, Minister of Health.

Dr H. B. Turbott, Director-General of Health.

Dr R. G. T. Lewis, Deputy Director-General of Health.

Dr C. A. Taylor, Director, Division of Hospitals.

Dr D. P. Kennedy, Director, Division of Public Health.

Dr J. M. Watt, nominee of New Zealand Branch of British Medical Association (from panel of 3).

Professor C. W. Dixon, nominee of University of Otago Council.

Dr J. O. Mercer, nominee of Medical Research Council.

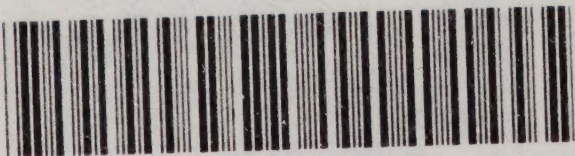
Mr E. M. H. Kemp, nominee of Municipal Association (from panel of 3).

Mr A. E. Reid, nominee of Counties Association (from panel of 3).

Mr P. V. E. Stainton, member of a hospital board.

Dr Muriel E. Bell, representing the interests of women and children.

Dr F. S. Maclean, (former Director, Division of Public Health), other member.



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BY AUTHORITY:
R. E. OWEN, GOVERNMENT PRINTER, WELLINGTON, NEW ZEALAND—1963

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PREFACE

At its meeting on 18 May 1961 the Board of Health received a request from the Minister of Health for an investigation into and advice upon the training and employment of health inspectors. A number of aspects for attention were listed and it was suggested that the Local Authority Affairs Committee might set up a sub-committee to inquire into the subject.

The Local Authority Affairs Committee is a standing committee to which the Board has delegated its statutory powers under the Health Act 1956 in regard to provision of sanitary services and other matters affecting local authorities. The Local Authority Affairs Committee at present comprises:

Dr H. B. Turbott, Director-General of Health.

Dr D. P. Kennedy, The Director, Division of Public Health.

Mr H. R. Bach, an engineer nominated by the New Zealand Institution of Engineers.

Mr E. M. H. Kemp, a representative of the Municipal Association of New Zealand.

Mr A. E. Reid, a representative of the New Zealand Counties Association.

Mr R. R. Harcourt, a representative of the Ministry of Works.

Mr A. K. Brown, a representative of the Treasury.

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Published under the authority of
HON. D. N. MCKAY, MINISTER OF HEALTH

INTRODUCTION

The importance of the health inspector's functions has long been recognised in New Zealand for the principle that health workers in this category should be trained and suitably qualified was established with the introduction of the Sanitary Inspectors Qualification Regulations in 1922. These regulations stipulated that persons appointed as sanitary inspectors must be holders of a certificate of the Royal Sanitary Institute, now the Royal Society of Health, in the knowledge of the duties of a sanitary inspector. Examinations for the qualifying certificate, which was of a fairly elementary nature, were conducted annually in New Zealand and students obtained tuition in the examination subjects by part-time study under private coaches.

This method of training proved to be unsatisfactory but, for a variety of reasons, it was not possible to establish a better system at the time.

In 1928 a local examination board was formed and, with the introduction of a New Zealand syllabus and regulations governing the examination, an attempt was made to raise the standard. Courses of part-time instruction were established in evening classes at technical colleges in Auckland, Wellington, and Christchurch, and a number of candidates passed the qualifying examination after attending these classes for varying periods extending in some cases over several years. Most of these pupils were young men who had completed an apprenticeship in the carpentry or plumbing trades and consequently had a good knowledge of all of the building trades. The examination was fairly elementary and the syllabus did not cover the wide range of subjects that is considered necessary for an inspector to study today. These classes were finally discontinued owing to lack of support. For the next few years the only available tuition was by means of part-time instruction conducted by a private tutor in Auckland and, for a few, correspondence tuition by the same tutor. Notwithstanding these difficulties, during the next few years there was on an average 20 candidates presenting for the examination and an average pass rate of 60 per cent.

With the steady increase in the population of New Zealand and the rapid development of built-up areas there has been a demand for sanitary services and improved sanitation and a consequent need for an increase in the number of qualified health inspectors. To meet the growing shortage of qualified inspectors and to raise the

standard of training, in 1948 the Department, in cooperation with the Wellington Technical College, organised the present central training scheme. Since then the average number of candidates presenting for examination each year has not increased, but the average percentage of passes immediately improved by more than 20 per cent and in recent examinations the pass rate has been as high as 100 per cent.

While this new scheme has undoubtedly provided an improved course of instruction, it has failed to solve the problem of staff shortage. The problem of recruitment and training of an adequate number of health inspectors is by no means peculiar to New Zealand. Similar difficulties have been experienced in other countries. In 1953 in the United Kingdom the Ministry of Health set up a departmental working party to study the matter, and after an investigation extending over a period of two years, a new scheme of training and examination for the diploma of public health inspectors was adopted. In several states of the U.S.A. university courses are available, and more and more students are qualifying for a bachelor's degree in sanitation. Everywhere there seems to be a need for qualified health inspectors and the trend is for better training and for a higher level of examination qualifications.

There is, at present, an acute shortage of trained health inspectors in New Zealand and the time has arrived for review of our recruitment and training methods.

On referral of the request from the Minister, the Local Authority Affairs Committee set up a subcommittee to handle the inquiry.

Membership of Subcommittee

Mr E. M. H. Kemp (Chairman), Representative of the Municipal Association.

Dr B. C. Lee, Representative of the Technical Education Section of the Department of Education.

Mr R. W. Pomare, Representative of the National Health Institute.

Mr A. E. Reid, Representative of the Counties Association.

Mr D. F. McEwen, Representative of the Royal Society of Health Examination Board.

Mr W. E. Watters, Representative of the New Zealand Institute of Health Inspectors.

Mr K. J. Mawson, Representative of the New Zealand Institution of Engineers.

Mr T. W. Adams, Representative of the Department of Health.

Mr K. B. O'Connor (Secretary), Executive Officer, Department of Health.

I. PROCEDURE

1. At the inaugural meeting we decided to seek the opinions and submissions of interested organisations. Those organisations that made submissions are listed in Appendix 1. We met on four other occasions.

2. We also had the benefit of the findings of the working party set up by the United Kingdom Ministry of Health referred to previously and to a number of reports of expert committees of the World Health Organisation, and, as the problems here are similar to those investigated by these various committees, we accepted their findings as authoritative and will quote sections of the reports which are considered appropriate.

II. THE ROLE OF THE INSPECTOR

3. Before attempting to define the duties of an inspector it is necessary to consider the organisation of environmental health services and the part he should play in the health team. Basic patterns for the administrative organisation of environmental sanitation in member countries of the western Pacific are described as follows in the Report on the Seminar on Education and Training of Sanitation Personnel in the Western Pacific Region published by the World Health Organisation in January 1960:

*“The Medical Officer of Health – Health Inspector Team—*This type of administrative unit, which functions normally with the Ministries of Health or other Government authorities, has sprung historically from the United Kingdom mould. In general, it operates with a minimum of liaison between health agencies and autonomous public works agencies at both country-wide and local levels. With minor modifications to suit regional conditions, this system is in operation in Australia, New Zealand, Malaya, and other Commonwealth countries of the region.”

*“The Health Officer – Public Health or Sanitary Engineer – Sanitarian or Sanitary Inspector Team—*This type of administrative complex, which is normally confined to Ministries of Health or upper echelons of government, is shaped historically in the U.S.A. mould. It operates with much variation in legally prescribed or financially induced liaison between health agencies and otherwise autonomous public works agencies. The scheme has been adopted by Japan, the Philippines, and the Republic of China.

“Although the various administrative organisations of the regions differ widely in their areas of responsibility, their requirements for the education and training of persons engaged in the field of environmental sanitation are basically the same. It was noted that a health inspectorate is common to all types of administrative public health bodies.”

4. A brief word by way of general description might be helpful at this stage.

New Zealand has a population of 2·5 million (including 160,000 Maoris) in an area of 104,000 square miles. The country is wholly within the temperate zone (latitudes 34° and 47°S). Accepted environmental standards are that all communities of any size should have water carriage system of sewerage, reticulated communal water supply, and organised refuse collection. Housing standards can be considered generally fairly high and there are no really formidable health problems. The country is extremely fortunate in being free from the vectors of certain diseases and in having no history of endemicity of certain other diseases common in other parts of the world. There are 263 territorial local authorities, made up of 17 cities, 128 boroughs, and 118 counties. The country is divided for health administration purposes into 19 health districts, each under the control of a medical officer of health who is an officer of the Department of Health. The medical officer of health is responsible for oversight of the local authorities in his health district in the discharge of their functions under the Health Act.

5. We consider that this country being well advanced in most respects, but being relatively sparsely populated with a progressively increasing population, is in a good position to adopt the best of two worlds.

6. It seems to us that the organisation best suited to New Zealand's needs is a composite of those adopted in the United Kingdom and the U.S.A. and it seems that the present trend is towards the development of such an organisation.

7. Here in New Zealand the local authorities are charged with the responsibility for sanitation in their areas and the Central Government acts as an advisory and coordinating agency responsible for development of standards, research studies, consultation, valuation, and training.

8. For the proper discharge of its statutory obligations, every local authority must appoint a sufficient number of “health inspectors” and, in the case of some smaller local authorities, they combine to appoint a health inspector for the work throughout the areas they control.

9. There are a few local authorities where an arrangement to appoint a health inspector is not feasible for economic or other reasons and in these districts the Department for the time being provides an alternative by making available the services of the inspector of health carrying out departmental duties in the area.

10. In the Health Act 1956, departmental officers are described as “inspectors of health” to distinguish them from “health inspectors” employed by local authorities and where those expressions are used throughout this report it is intended that this distinction applies. Where we refer to both groups we have used the term “inspector” but it should be remembered that these distinctions will not necessarily apply to any material we have quoted.

11. There is no scope for employment of qualified inspectors other than in the service of central and local governments and there is a very limited number of senior posts available. To encourage recruits of the right calibre for the senior posts and to make the best use of a relatively small labour force, the maximum possible promotion potential should be provided. We consider that to this end there should be ready interchange of inspectors between the Department of Health and local authorities and there should be open competition for any post of Chief Health Inspector or Senior Inspector of Health that may become vacant so that any inspector of above average ability may be assured that it would be possible for him to secure the highest position available in either service.

12. In all of the technical reports we studied there was general agreement that the inspector was a key agent in environmental services and all emphasised the extent of the technical knowledge required by this officer and the difficulty of his task in bringing about improvements by means of advice and persuasion to secure willing cooperation. The importance of personal qualities as well as technical competence is also stressed in the following quotations from the second and third reports of the Expert Committee on Environmental Sanitation, published by the World Health Organisation in its Technical Report Series:

“Health inspector. This grade has been described as the backbone of the sanitation service. Certainly this officer has a very important part to play in the wide field of environmental sanitation. His educational background should be the equivalent of some 12 years of education from the beginning, and should be sufficient to permit him to matriculate at a university, for his duties involve inspections, dealing with complaints, contact with the public, and promotion of programmes of sanitary importance. For these important duties, and particularly in view of his close contact with the public, he has to be chosen not only for his ability, but for his personality and integrity.”

“Character, ethical standards, motivation, and social consciousness. Regardless of educational levels and training content, great importance in selecting students must be attached to those essential qualities, which may well be more important than mere academic ability. However difficult it may be to assess these factors, a determined attempt should be made to attract and select the best candidates.”

13. We consider these factors are of particular application in New Zealand where the majority of inspectors are working without direct supervision and where there is a high proportion of sole charge health inspectors and a great number of small local authorities which are dependent on the advice of the health inspector and must rely on his judgment and advice in environmental sanitation matters and administration of laws. We believe that in the public interest it is not only necessary to maintain our present level of sanitation, but also to keep pace with other developing countries in improving our environmental health services. It is, therefore, necessary not only to prevent a falling off in the standard, but to take active steps to ensure a gradual improvement in the quality of the health inspection services. To this end only candidates of good basic education and ability should be recruited and they should be given a thorough training in sanitary science if they are to be expected to fulfil their purpose in the health team.

14. Inspectors of both services should be interchangeable and there is scope for those employed by Central Government to be recruited partly from local authorities as well as partly as career cadets or adult trainees. It was, therefore, with satisfaction that we noted that the Department of Health has implemented this policy by calling recently for applications from outside the Department for a number of positions of Special Grade Inspector of Health. We consider that the Department should encourage local authorities to follow this lead as we believe it would be in the interests of the environmental service as a whole. Certainly all senior posts for inspectors in both Government and local authority service should be advertised with a view to ensuring the maximum of opportunity to secure the services of the most competent officer available.

Recommendation

We recommend:

- (1) That the Department of Health and the local authorities recognise the principle of interchangeability of positions as inspectors in both Government and local authority service.

III. THE DUTIES OF HEALTH INSPECTORS AND INSPECTORS OF HEALTH

(a) The Health Inspector

15. Sanitary work has become so well established in principle, and so deeply grounded in tradition and precedent, and depends so much on proper interpretation of such a mass of legislation, that it has become a specialty in its own right. It is accepted that its routine application requires the attention of experienced specialists, but, so far as we know, there has been no previous authoritative list of duties of a health inspector in New Zealand. Perhaps for the reason that his duties are nowhere precisely defined there is much confusion over what they should be. There are instances of inspectors not being employed to the best advantage and being required to spend undue time on work not connected with those duties for which they have been specially trained. The Health Act 1956 is helpful in giving the broad role of the health inspector and the syllabus of the Royal Society of Health New Zealand Examination Board gives a fairly full indication of the duties in which inspectors are expected to be competent. The functions and duties of health inspectors, as described in the submissions by the Institute of New Zealand Health Inspectors and which are included as Appendix II, we have accepted as being substantially correct. The duties of inspectors in New Zealand are considered to be very similar to those set out in the report of the British Working Party. Appropriate extracts from this document are attached as Appendix III to this report. It is from this information and the particular knowledge of some of our members that the following list has been compiled of items of work which the average "sole charge health inspector" may be called upon to perform. The term "sole charge health inspector" is used to denote an officer of a local authority who is the only qualified inspector employed by that local authority and is in effect its "Chief Health Inspector". He may be, for example, the single health inspector employed by a county or a fair-sized borough with a population exceeding 10,000 and as such is responsible, without direct technical supervision, for programming and carrying out the supervision of all sanitary features and for ensuring satisfactory standards throughout the area of that particular local authority. A "sole charge health inspector" must, therefore, be trained and competent to cope with a comprehensive range of duties.

16. A point that might be made at this stage is that a local authority employing a "sole charge inspector" will as long as it retains him, have no call to consider the training of additional staff. Such a local authority would ordinarily recruit an experienced

inspector who has been fully trained for the job and would not find it practicable to train a cadet.

17. For any qualified inspector to be eligible for such a post the basic training must cover all the duties and it is for this reason that a "sole charge health inspector" is taken as being typical.

18. The list of duties is as follows:

- (1) *Administration*: Depending on the extent and scope of his work the health inspector must conduct technical correspondence, make reports, keep records and undertake public relations work. He is required to supervise the work of such technical staff and clerical staff as is necessary to enable him to perform his duties including the necessary supporting office work.
- (2) *Burial and Cremation*: The Health (Burial) Regulations 1946 deal with the sanitary construction and maintenance of mortuaries and reception rooms and provide for proper conduct of the sanitary aspects of the preparation of bodies for burial or cremation or embalming. A funeral director cannot obtain registration of his mortuary premises unless he has first obtained a certificate of fitness signed by a health inspector. The health inspector is concerned with the maintenance of cemeteries and the disposal of dead bodies. He is sometimes required to attend and supervise exhumations.
- (3) *Control of Infectious Diseases*: All diseases notifiable under the Health Act must be followed up with the object of identifying the channel of infection and preventing its further spread. A sound knowledge of the theory of communicable disease control, a subject of very extensive scope, is essential to the adequate performance of duties which, in addition, call for the exercise at times of considerable tact and discretion, involving as they do intimate dealings with the public. In the event of the outbreak of any infectious disease, health inspectors have certain statutory powers conferred upon them under sections 71, 79, and 86 of the Health Act 1956. These powers are very wide even to including the power of arrest without formal warrant in certain circumstances.

The duties and obligations of health inspectors in the control of infectious diseases are more precisely set out in Part IV of the Health (Infectious Diseases) Regulations 1948 and as these are of some importance and give a better idea of the scope of this work, a copy is included as Appendix IV.

- (4) *Cleansing and Waste Disposal*: The checking of community cleansing and refuse disposal services for adequacy and

sanitary conditions and the implementation of community campaigns and other action aimed at keeping any built-up area free from refuse.

- (5) *Disinfection and Fumigation*: The health inspector may be required to supervise the disinfection of articles (for example, imported animal hairs and bristle) for compliance with the Anthrax Prevention Regulations made under the Health Act. Fumigation of buildings or ships may be required as a rodent or insect control measure and must be carried out with due regard to precautions specified by the Fumigation Regulations.
- (6) *Dwellings*: The health inspector must be able to evaluate the sanitary quality of the residential environment, be prepared to participate in programmes for improved housing, and concerned to ensure that housing is safely and hygienically maintained. To perform these functions adequately, not only will he need to have a broad knowledge of the engineering and architectural aspects of housing construction as well as a precise knowledge of the bylaws of his local authority, but he will be the better equipped if he also has some appreciation of economic and financial aspects.

He is in many cases the “officer” to whom the powers of the local authority under the Housing Improvement Regulations are delegated and the “officer” authorised by the local authority to issue notices and certificates relating to repairs to premises or the issue of “cleansing orders”, “closing orders”, or “demolition orders” in accordance with the provisions of sections 39 and 53 of the Health Act 1956. He may from time to time be required to give evidence at appeal or Court proceedings relating to the administration of the relevant parts of both Acts.

- (7) *Drainage*: Drainlaying work as defined in regulation 20 of the Drainlayers Registration Regulations may only be performed by registered drainlayers who must first obtain a drainage permit from the local authority. It is one of the functions of the health inspector to examine plans or proposals for drainage systems or septic tank installations and to check the design to ensure that it meets with the requirements of the Regulations, before a permit is issued.

All senior inspectors of health and a number of inspectors of health and health inspectors have been appointed as examiners for the purpose of the Health (Drainlayers Registration) Regulations 1948 and are empowered to issue certificates to drainlayers they have examined and found

competent to perform the work and be registered as drainlayers. Health inspectors, registered engineers, and registered drainlayers are the only persons who may be authorised by local authorities to carry out inspections and test the work of a registered drainlayer for the purpose of regulation 93 of the Drainage and Plumbing Regulations 1959.

- (8) *Eatinghouses and Cafeteria:* Eatinghouses are required to be registered and must comply with the Eatinghouse Regulations. The health inspector must ensure that such premises are constructed and conducted in accordance with the minimum standards laid out in the regulations. He is also concerned to ensure that a satisfactory standard is maintained in private cafeteria and that, in these premises, which are not at present subject to specific regulations, adequate precautions are taken to prevent an outbreak of food poisoning.
- (9) *Food Premises:* Premises for the manufacture, preparation, packing, and sale of food must be registered and must comply with the standards prescribed by the Food Hygiene Regulations. In every local authority area there are a number of such premises and in some instances a very wide variety of premises to which specific regulations relate. The construction and maintenance of the premises and the conduct of food handlers engaged in these premises are supervised by health inspectors who must be in a position at all times to offer technical advice and guidance to employers and staff alike.
- (10) *Food Inspectors:* It is a requirement of the Food and Drugs Legislation that food for sale for human consumption must be sound and wholesome. In the Food and Drugs Amendment Act 1962 provision is made to permit local authority inspectors to seize and destroy unsound or unfit food. Health inspectors must, therefore, be competent to examine foodstuffs and to exercise sound judgment as to whether the food is unwholesome, deteriorated, or injurious to health. They are required to investigate complaints concerning foodstuffs sold or held for sale and take any lawful action necessary to prevent the sale of food considered unwholesome, unsound or unfit for human consumption.
- (11) *General Inspection of the District:* The health inspector must become familiar with the general nature of his district, particularly those features which do, or may, have a bearing on the health or environment of the people. He must in so far as his authority extends take any necessary action to ensure:

- (a) The district is kept free from statutory nuisances:
 - (b) The maintenance of clean air:
 - (c) The provision of a wholesome water supply:
 - (d) The protection of food from contamination:
 - (e) The sanitary disposal of wastes:
 - (f) An adequate standard of housing, public buildings, work places, and recreational facilities.
- (12) *Hairdressers' Premises*: These premises are required to be registered and thereafter inspected at regular intervals for compliance with the requirements of the Hairdressers' Regulations.
- (13) *Hotel and Licensed Premises*: In the inspection of premises licensed under the Sale of Liquor Act regard must be had to the general standard of accommodation, cleanliness, house-keeping and maintenance, and efforts must also be directed to ensure compliance with the standards prescribed in the Eatinghouse Regulations and the Food Hygiene Regulations. The health inspector is required to furnish reports connected with the issue or renewals of licences and is the appropriate "officer" to be authorised by the local authority to be heard before the Commission or any Licensing Committee in any proceedings respecting the issue of licences under the Sale of Liquor Act.
- (14) *Health Education*: The field of health education is of the utmost importance in improving the health practices of the people, and the health inspector is in the position to make one of the greatest contributions. Sanitation measures will be effective and of lasting duration only if the cooperation of the community can be secured and retained and it is accordingly accepted that the modern health inspector should spend at least 10 per cent of his time in specific health education projects. It is therefore essential that he be fully trained in health education principles, methods and media.

In addition to the health education work incidental to his routine day-to-day duties the health inspector is required to initiate and organise the conduct of special community campaigns for promotion of environmental sanitation projects and to carry on the systematic group instruction of food handlers, plumbers, and drainlayers and other selected groups. In order to take the leadership in organisation of study groups and actively assist community organisation in health activities the health inspector must not only be technically competent but he must also be able to undertake a considerable amount of public speaking and the writing of articles for the local press or for periodicals circulating in the district.

(15) *Motels and Camping Grounds*: There is potential for sanitary problems at accommodation places which experience large seasonal influxes of residents. Special attention is necessary to the disposal of refuse and sewage, the provision of water supplies, and the maintenance of cleanliness and hygiene conditions generally.

(16) *Noxious and Offensive Trades*: There are 25 trades listed in the schedule of offensive trades under the Health Act 1956. The health inspector is required to furnish reports on applications to establish any of these trades and he must ensure that registered trades are operated with a minimum of offensiveness.

A good knowledge of the processes involved and any particular feature likely to give rise to offensiveness in any of the trades or undertakings is essential. The proper and regular supervision of such premises is an important responsibility of the health inspector.

(17) *Nuisances*: The detection, abatement, and prevention of nuisances form the basis of environmental sanitation. Keeping the district free from nuisances is a prime responsibility of every local authority and is, therefore, one of the most important duties of the health inspector.

Section 29 of the Health Act defines "statutory nuisances" and sets out 17 cases which may be offensive or likely to be injurious to health. The list is intended to be a comprehensive one and could include almost any sanitary conditions but specifically those arising from:

- (a) Suspected water supplies.
- (b) Sewerage.
- (c) Waste water.
- (d) Stormwater.
- (e) Drains.
- (f) Sanitary conveniences.
- (g) Noxious trades.
- (h) Odours.
- (i) Air pollution.
- (j) Rats and vermin.
- (k) Insect pests.
- (l) Substandard buildings.
- (m) Keeping of animals.
- (n) Animal carcasses.

The health inspector must supervise his district to detect and abate nuisances. He is empowered in certain circumstances to enter any premises and arrange for the abatement

of nuisances and, in that event, all expenses incurred are recoverable from the owner as a debt to the local authority.

- (18) *Other Buildings*: Public buildings are required to be inspected from time to time with particular regard to the adequacy of sanitary facilities, standards of lighting and ventilation, and freedom from rodent infestations. The health inspector is concerned with the licensing of public halls under the Municipal Corporations and Counties Acts and must report on the suitability and condition of the hall prior to the renewal of the licences annually. In many instances the sole charge health inspector also acts as building inspector for the local authority and this arrangement has proved a very convenient one for smaller local authorities. In carrying out his duties connected with building construction and the inspection of public and other buildings, the health inspector must be able to conduct discussions and negotiations with architects, builders, tradesmen, and other trained persons, on, as far as possible, an equal footing.
- (19) *Places of Recreation*: The health inspector is required to report from time to time on places of recreation throughout the local authority area. Established recreation places need to be checked as occasion demands for sanitary conditions and the adequate provision of sanitary facilities.
- (20) *Plumbing*: Local authorities may only appoint persons registered as an engineer under the Engineers Registration Act 1944 or a person qualified for appointment as a health inspector as the “engineer” for the purpose of administering the Drainage and Plumbing Regulations 1959.

No person may carry out sanitary plumbing without a permit. Inspections of drainage and plumbing work with a view to ensuring compliance with the Drainage and Plumbing Regulations are important functions of the health inspector and call for an expert knowledge of the technical provisions and requirements of those regulations.
- (21) *Pest Control*: This work involves the furnishing of specialised advice on dealing with insect and rodent infestations and where necessary the organisation of community drives for suppression of pests. The health inspector must be able to assess accurately the degree of infestation and plan appropriate control measures aimed at suppressing or eradicating pests or vermin of public health significance.
- (22) *Pollution of Rivers and Streams*: There are special considerations involved in advising on the disposal of tradewastes and effluents so that pollution of rivers and streams will be

avoided. Inspectors in some localities have already assisted in sampling and survey work and will, as the activities of the Pollution Advisory Council are extended, become more involved in assessment work and supervision of disposal points.

- (23) *Public Utilities:* Municipal water supplies, water carriage systems of sewage and disposal plants are becoming more numerous in the smaller local authority areas. The health inspector is required to cooperate with the controlling authorities in dealing with the problems associated with the provision of these amenities. He is also usually involved in the preliminary investigations when schemes are proposed and must carry out routine sampling and test work.

The health inspector makes routine inspections of sewage disposal plants and sewage outfalls to see that no nuisance exists. With regard to existing water supplies he is involved in the enforcement of the Water Supply Protection Regulations and is, in some locations, appointed as "engineer" for the purposes of these regulations.

- (24) *Swimming Pools and Bathing Places:* Public and semi-public swimming pools must be regularly inspected to see that pool management is satisfactory. Water treatment plants at swimming pools need to be checked from time to time to ensure that they are working efficiently and tests should be made to determine whether the pool water has been effectively disinfected. Periodically water samples are taken for analysis and bacteriological examination. Other bathing places such as beaches are inspected routinely to check the sanitary conditions of facilities and to investigate possible sources of sewage pollution.

- (25) *Saleyards:* Any proposals to establish a new cattle saleyard must be investigated by the health inspector and a report indicating whether or not the proposal meets with the minimum standards laid down in the Cattle Saleyards Regulations will be furnished. Existing cattle saleyards and trucking depots are regularly inspected to ensure that they are maintained in a sanitary condition and free from nuisance.

- (26) *Smoke Abatement:* Part V of the Health Act 1956 and regulations thereunder provide for the control of emissions of smoke or noxious fumes from industry. Health inspectors are required to detect smoke nuisances and to carry out observations to determine whether appropriate preventive measures are being taken.

- (27) *Statutes and Bylaws*: The duties of a health inspector include the administration and enforcement in his area of Acts, regulations, and bylaws touching on public health. Where occasion arises he may be required to prosecute offenders on behalf of his council and where legal difficulty is involved, he must confer with and brief counsel concerning the alleged breach.

(b) **The Inspector of Health**

19. Some additional training would be necessary to enable officers recruited to the Department from health inspection work with local authorities to cope with the following duties which are exclusively departmental and now being performed by inspectors of health:

- (1) *Agricultural Chemicals*: Inspectors of health as "inspectors" appointed under the Agricultural Chemicals Act require a knowledge of the legislative restrictions relating to sale of agricultural chemicals such as weedicides, herbicides, fungicides, insecticides, and rodenticides, and the precautions necessary for their safe use, including the application of agricultural chemicals by aerial spraying. Cases of poisoning from any of these substances met with at work are notifiable under the Health Act and inspectors of health must be competent to investigate such cases.
- (2) *Anthrax Prevention Regulations*: Regulations providing for control of imported animal products likely to convey anthrax are administered by the Department. The task of supervising the conveyance from port of entry to an approved disinfection premises and the effective disinfection of such materials falls to the inspector of health who would be responsible for ensuring that proper precautions are observed in the course of this work.
- (3) *Factories and Shops*: The inspector of health has a primary role in ensuring satisfactory standards in, and in the environs of, factories and shops; and a secondary role in liaison with inspectors of the Department of Labour in the administration of the Factories Act and the Shops and Offices Act. Section 78 of the Factories Act provides that every inspector of health shall have the same powers and authority as inspectors of factories in respect of those provisions of the Act and regulations thereunder which impose requirements as to health and hygiene.
- (4) *Food and Drugs Act*: All inspectors of health are appointed as "officers" under the Food and Drugs Act and are responsible

for the field work of administering the Act and regulations thereunder. They are required to give advice to manufacturers and sellers on food quality standards, labelling requirements, and permitted food additives. This is a developing field in food technology calling for special knowledge and requiring special study.

- (5) *Hydatids Control*: By administrative arrangement with the Department of Agriculture, which administers the Hydatids Act, the approval of location and the supervision of dosing strips have been entrusted to the medical officer of health who delegates those duties to the inspector of health. A knowledge of control measures is required for the effective discharge of these duties.
- (6) *Notifiable Diseases*: Section B of the First Schedule and the complete Second Schedule of the Health Act list 26 diseases or conditions which are notifiable only to the Department of Health, whose officers, including the inspector of health, may be required to investigate and apply appropriate control measures.
- (7) *Occupational Health*: Under the direction of the Assistant Director of the Public Health Division who is responsible for occupational health, inspectors of health assist in survey work and special investigations relating to notifications of occupational diseases and conditions, and with the administration of regulations specially framed for the occupational scene, such as the Lead Processing Regulations, the Electroplating Regulations, the Spray Coating Regulations, the Noxious Substances Regulations, the Gas Supply (Safety) Regulations, and the Abrasive Blasting Regulations. The Department conducts special courses to provide the extra instruction necessary in these activities.
- (8) *Poisons and Narcotics*: The administration of the poisons and dangerous drugs legislation are important functions of the Department of Health. Inspectors of health are required to attend to field work dealing with the storage, labelling, and control of poisons. All senior inspectors of health are appointed as "inspectors" under the Dangerous Drugs Act.
- (9) *Port Health Inspection*: To implement the provisions of the Quarantine (Ship) Regulations, inspectors of health at sea ports must carry out sanitary inspection of ships and ensure adequate measures for control of rats. They also assist the port health officer in his duties connected with the granting of pratique.

- (10) *Public Service Liaison*: An inspector of health is required to have dealings with a number of Government Departments and must have particular knowledge of the relative functions of those associated with activities touching on environmental health.
- (11) *Sanitary Works*: Subsidies towards the actual costs of sewage treatment plants are payable in certain circumstances. Inspectors of health are required to furnish reports on these and other sanitary works. To enable them to undertake supervision of treatment plants situated in their areas a number of inspectors of health have completed a course of instruction for sewage treatment plant operators which is conducted by the Works Department at Trentham.
- (12) *Vector Control*: The international airports in the country are supervised by inspectors of health, who are responsible for vector control measures and the disinsecting of aircraft arriving from overseas. They also have certain duties concerned with the implementation of the Quarantine (Air) Regulations.
- (13) *Venereal Disease Control*: Under the direction of the medical officer of health the inspector of health engages in such duties as the tracing of cases and contacts of cases of venereal diseases and, where necessary, takes action to ensure that such persons are having the necessary treatment.

Further Supplementary Training of Health Department Officers

20. Whilst the basic training for health inspectors and inspectors of health should be the same, some additional intensive training is necessary for Government officers who are required to undertake specialised work, including evaluation, research, and planning on a more than local scale, the implementation of particular legislation administered by the Department and the following duties which are separately undertaken by the department, as for example:

- (1) *Dairy Technology*: Milk treatment stations throughout the country are subject to the provisions of the Milk Treatment Regulations made under the Milk Act. The Act is administered by the Department of Agriculture but as an administrative arrangement the Department of Health takes responsibility for the day-to-day supervision of 31 out of the 47 of these stations. The duty calls for an extensive knowledge of milk treatment to enable departmental officers to meet on equal terms managers of treatment stations, many of whom hold a professional qualification in dairy technology.

- (2) *Care of the Aged*: The Department administers a scheme for subsidising the provision of homes for the aged and the Health Act provides for regulations governing the registration, licensing, and control of such homes. Inspectors of health have specific duties and require special understanding of the problems involved in dealing with such matters.
- (3) *Evaluation Work*: The Department has a responsibility to ensure that local authorities are meeting their obligations under the Health Act. Inspectors of health are required to undertake evaluation of standards attained and supervision of programmes in their local authority areas and furnish reports to the medical officer of health. This calls for an objective approach and knowledge of evaluation techniques.
- (4) *Health Education*: The Department has a Division of Health Education staffed by officers specially trained in health education. It is the Department's policy that inspectors of health work in close cooperation with these officers and devote at least 10 per cent of their time to this work. The Senior Inspector of Health in each health district has a place on the District Health Education Committee which has the special function of promoting local health education activities. To fit the inspector of health for his role as a member of the health education team a particular knowledge of objectives and of modern health education techniques is required.

Recommendations

We recommend:

- (2) That the duties as outlined for a health inspector be accepted as the acknowledged duties of a sole charge health inspector.
- (3) That the duties as outlined for an inspector of health be regarded as the acknowledged duties of inspectors of health.
- (4) That provision be made by the Department of Health for additional intensive training of qualified officers for appointment as inspectors of health to cope with those extra duties which are exclusively departmental in nature.

IV. AMOUNT OF TECHNICAL KNOWLEDGE REQUIRED

21. Whilst it is accepted that the average inspector in New Zealand is reasonably efficient, it cannot be claimed that our standard of environmental sanitation has yet reached a desirable level. There is evidence that certain aspects of sanitation are not receiving proper attention. The possibility that some inspectors may not have

a sufficient technical knowledge to cope with their job cannot be overlooked. Nowhere in the comments received by us was there a suggestion that the present training methods in New Zealand go beyond the desirable minimum standard of instruction in technical knowledge. On the contrary, the consensus of opinion was that the present training course did not provide the basic training now required by an inspector having regard to the increasing range and complexity of the knowledge he is required to have and the duties he is expected to undertake. The United Kingdom, the United States of America, and other developed countries are in agreement that improved standards are necessary. This opinion has been endorsed at a seminar on the training of inspectors, held in Japan by the World Health Organisation. It is a matter of interest that the United States of America, for example, has now raised its standard to require four years of full-time tuition. A study of the training and examination syllabuses in all the developed countries shows there is agreement or no wide difference of opinion on the instruction necessary for an inspector. All consider that adequate instruction is necessary in the basic social, biological, and physical sciences, as well as specialised instruction in a range of technical subjects. In New Zealand over the years the pattern of the examination syllabus has always been taken from that used in the United Kingdom and there does not appear to be any good reason why there should now be a departure from that procedure. The new syllabus (Appendix X) published by the Public Health Inspectors Education Board (a United Kingdom Board) in 1960 covers the same range of subjects as has been taught in the New Zealand central training scheme during recent years and it seems eminently suitable for our purpose.

22. From a study of the duties, the technical knowledge required by an inspector, the various training schemes in operation in different countries, and the long experience of the Health Department with inspectors in New Zealand, we conclude that to train an inspector to a satisfactory level of competence requires tuition in technical subjects extending over a period of about 1,000 hours.

Preliminary Education

23. Obviously the standard of preliminary education reached by candidates will have a great bearing on their ability to cope with the technical content of any training course. For a number of years the New Zealand Examination Board has stipulated that candidates for the examination must have obtained a level of education equal to that of the New Zealand School Certificate with at least two years post-primary tuition in chemistry and physics. In comments received by us it was generally accepted that this was

a minimum preliminary education qualification, but there is a strong body of opinion that the level should be raised to that of University Entrance. Having in mind the present trends and the desirability of a percentage of inspectors progressing to higher education at professional level, we consider the recruitment of candidates who have passed the University Entrance examination should be encouraged and that it would be desirable for candidates to be able to fulfil the present preliminary education requirements set out in the regulations governing the New Zealand examinations. It has, however, been brought to our notice that many secondary school pupils now take the subject of general science and it would therefore limit the number of potential candidates if the present stipulation regarding chemistry and physics were strictly adhered to. In the circumstances, and taking into account that trainees would receive additional instruction in both chemistry and physics, we consider that the present requirement should be altered to provide for a minimum pre-entry education standard of School Certificate with at least one science subject, preferably either chemistry or physics. We think that this standard, once declared, should be firmly adhered to in every case.

Recommendation

We recommend:

- (5) (a) That the pre-requisite standard of education be a minimum of the New Zealand School Certificate or its equivalent, including chemistry or physics or general science up to New Zealand School Certificate standard.
- (b) That recruitment of candidates with University Entrance be encouraged.

V. METHODS OF OBTAINING TRAINING

The Full-time Course

24. A full-time course of instruction known as the central training scheme was organised by the Department in 1948. A training course was arranged in cooperation with the Wellington Technical College and the first class of 19 students was enrolled in 1949. All these students succeeded in the examination in 1950.

25. An analysis of the class record for the past 13 years is shown as an Appendix V to this report. It will be seen that, of the 151 students who passed through the class, only seven failed – a very satisfactory pass rate of better than 95 per cent.

26. Also included in this Appendix is an analysis of the examination results for the 18 years preceding a commencement of the class and it will be seen that during that period, of the 247 candidates presenting, only 162 passed the examination, giving a pass rate of approximately 53 per cent. The advantages of the class training cannot be judged on the pass rate alone as the more important object of the scheme is to give inspectors a training to fit them for their work rather than to enable them merely to pass the qualifying examination.

27. The duration of the training course is from the beginning of March in one year to the end of May in the following year. From March until the end of the academic year (late November or early December) the students receive theoretical training at the Wellington Polytechnic with the last fortnight being spent at Massey Agricultural College to receive an intensive course of instruction in dairy technology. In the class the students receive 780 hours of theoretical instruction by some 45 lecturers. From December to May the students are attached to offices of the Department or of their sponsoring local authorities for practical training in the field. During the field training the candidates associate with experienced inspectors and are required to complete a schedule of inspections of a wide variety of premises, to furnish reports, to carry out investigations, and complete projects set for them by the supervising inspector. A schedule of the practical inspections the candidate must complete in the period December to May is included in Appendix VII. Towards the end of May the candidates sit for the qualifying examination conducted by the Examination Board of the Royal Society of Health. As soon as they qualify they are posted to districts to undertake under supervision the full duties of a qualified inspector.

28. The central training scheme appears to us to have some distinct advantages of which we list the following:

- (a) The degree of uniformity of instruction possible when the entire intake of inspectors is brought together as a group for instruction.
- (b) The rapidity of training by giving the amount of theoretical instruction necessary to pass the qualifying examination in the shortest possible period of time.
- (c) The enabling of students to devote the whole of their time and attention to study without the distraction of occupational activities.
- (d) The unit cost per candidate is less, for training the relatively few candidates required annually, than the alternative of training a number of small groups in various centres.

- (e) The demonstrations and guided visits which form a necessary and important part of the instruction are likely to be more serious, comprehensive, and beneficial than would otherwise be the case.
- (f) It is easier for students, particularly adults, to carry out theoretical study while attending daily classes with other students than it would be in working alone of an evening after completing a day's work.
- (g) It has demonstrably improved the pass rate in the qualifying examination.

29. To summarise, the advantages of the present central training scheme over any method of training previously adopted in New Zealand appear to be that it provides a better, cheaper and quicker method of giving a full course of theoretical instruction for the whole range of the subjects set out in the syllabus.

30. The following disadvantages must also be considered:

- (a) The central course requires the physical presence of the candidates in Wellington for a period of approximately nine months.
- (b) It has a limiting effect on recruitment as a proportion of applicants who are potentially good inspectors have domestic commitments which preclude them coming to Wellington for training.
- (c) The cost must at present be met by those local authorities which are prepared to sponsor candidates, but have no real assurance that they will retain the services of their appointees for a sufficiently worth-while period after qualification.
- (d) The difficulty of providing an adequate amount of practical instruction for students during the relatively short period of attendance at the course.
- (e) The present course does not contain a sufficient number of hours of theoretical instruction to provide all the technical knowledge required for inspectors of reasonable competence and should be extended by at least 200 hours to cover fully all the subjects.

31. The greater part of the difficulties (a), (b), and (c) could be overcome by instituting an equitable system of payment of the cost of training inspectors so that the burden would not be unfairly placed on any particular number of local authorities and by raising the remuneration, status, and promotion potential of inspectors so that a sufficient number of recruits of the right calibre would be prepared to meet the difficulties and inconvenience of attending a central training scheme in Wellington.

32. To overcome (d) and (e) it would appear to be necessary either to extend the period of attendance at the present course or to make arrangements for trainees to receive the necessary amount of formal instruction during their periods of attachment for the six months' practical tuition.

33. We have gained a most favourable impression of the full-time course. In fact it may well be the ideal method of training inspectors.

Part-time Training

34. There is no part-time course of instruction for training inspectors available in New Zealand at present.

35. One advantage of this method of training is that any person with a suitable background and acceptable preliminary education would attend for instruction at evening classes or for one or two days each week at a university or technical school and complete the training while he is gainfully employed at his normal employment, not necessarily with a local authority or the Health Department.

36. In localities where any such course was arranged there would be the added advantage that local authorities could recruit local residents. The pool of labour from which recruits could be drawn would thus be enlarged to include those with domestic circumstances which would prevent accepting a position requiring attendance at a central course for a lengthy period.

37. The chief disadvantages are:

- (a) The training period for 1,000 hours' theoretical instruction would of necessity extend over several years.
- (b) The longer period of training might act as a deterrent, particularly to younger applicants who could almost complete a degree course in the same period of time.
- (c) A problem would be posed of arranging suitable courses in different centres where there is unlikely to be a continuous stream of students and the roll is not likely to exceed a dozen anywhere at any time. We realise that the organisation of a part-time course requiring about 40 specialist lecturers cannot be undertaken lightly and that the Education Department would probably require some assurance that the course would be supported with sufficient numbers of students before it could proceed with such a proposal.

38. It must be kept in mind, too, that the inspector's calling is unusual in that the training and qualification does not fit the person for any other occupation. Employment is available only in the service of local authorities or the Health Department and the total staff requirement is strictly limited. (Wastage and demand are more particularly dealt with in Chapter VI.)

39. In the present full-time course the students receive approximately 780 hours' theoretical instruction, but this is considered by those competent to judge as being insufficient for effective coverage of the subjects set out in the syllabus. With few exceptions the recruits today have no trade background and find it necessary to devote a considerable amount of time to the study of building sciences – a very important ingredient of the training course. It is difficult to see in the circumstances how the number of hours of theoretical instruction could be shortened. To receive the same amount of instruction students would require to attend evening classes two nights each week for a period of five or six years. Having regard to the rewards offered for qualified inspectors and the promotion opportunities for the average inspector, it is extremely doubtful whether adults could be persuaded to complete a part-time course of study extending over such a long period. The time could be shortened considerably by adopting a system of day release whereby students would attend a technical school for one or two days each week or by means of "sandwich courses" consisting of one term of full-time attendance each year and the remainder of the time being made up by attendance at part-time classes.

40. On the information available to us the organisation of evening classes at technical colleges for trainee inspectors does not seem to be warranted, but part-time theoretical instruction in day-release classes seems reasonable if the Education Department could arrange suitable courses in centres where they are warranted.

Correspondence Courses

41. Correspondence tuition has much the same disadvantages as have evening classes in that the student may study after his day's work and that a longer period is needed to cover the ground that could be dealt with much more quickly by intensive full-time studies. On the other hand the absorption of knowledge may be more effective if it is presented at a slower rate and can be associated with the practical application of that knowledge on the job.

42. However, as the number of correspondence students is not likely to be very great and though the technical correspondence school is well placed to use the services of part-time specialists, it would not be easy to justify the appointment of enough full-time specialist teachers to cover the range of subjects required. In a country like New Zealand with a scattered population it may well be more necessary to rely on correspondence than in more closely settled countries, but that tuition should undoubtedly be supplemented by some scheme of block courses. Such an arrangement might be effective but generally speaking live classes are preferred.

Paid Pupilage and Part-time Day Release

43. This system has been adopted by the Public Health Inspectors Education Board in the United Kingdom and is described very fully in the publications supplied by that authority and attached as an Appendix VII to this report.

44. Briefly this system consists of a four-year course of full-time practical training under a system of paid pupilage with local authorities, embodying theoretical instruction on a part-time release basis. The scheme is limited to those local authorities which are able to provide adequate practical instruction over the four-year period and the students are required to attend classes to receive over 900 hours of theoretical instruction during their training period.

45. The advantages are:

- (a) The trainee would have the benefit of day-to-day association with experienced inspectors and opportunities of observing the practical health inspector work while receiving the theoretical instruction.
- (b) The trainee would soon be able to undertake some health inspection work and so become progressively more useful to his employing authority during his training period.
- (c) The instruction spread over a period of years would be less concentrated than at present.
- (d) The training on the job would help the inspector to an appreciation of the extent of the knowledge required by inspectors of the various technical subjects to be studied.
- (e) The chief or senior inspector would be personally responsible for the practical instruction of the trainee who would thus benefit from the regular supervision received.

46. This system appears to have many advantages, but it would appear to be feasible in New Zealand only at main centres where a properly organised part-time class of instruction could be arranged. It seems that only the larger local authorities could take advantage of the scheme for it would be necessary to have a staff of experienced inspectors to oversee the practical training the student obtained during the course of his day-to-day work.

47. The scheme would require to be very carefully supervised with provision for the approval of both students and experienced instructors. It is doubtful if suitable class instruction could be arranged in more than one centre at the present time.

48. We conclude, from a study of the duties, the technical knowledge required by an inspector, the various training schemes in operation in different countries, and the long experience of the

Department with inspectors in New Zealand that to train an inspector to a satisfactory level of competence would require tuition in technical subjects extending over a period of about 1,000 hours. Of the various methods of providing this instruction other than the full-time class the system of paid pupilage with day release to attend classes for one day each week over a four-year term would seem to be the most satisfactory. But this would be available only to the larger local authorities in one or two centres and would call for a long period of training.

49. It should, however, be possible to design a course based on a combination of both methods which would provide theoretical technical instruction of approximately 1,000 hours and a sufficient amount of intensive practical experience with a training period of say two or three years.

50. The design and organisation of such a course has been investigated by the Department of Education and, following discussions with the Department of Health, a tentative proposal with subject breakdown and diagram for programme was drawn up and is set out hereunder:

PROPOSED COURSE FOR HEALTH INSPECTOR TRAINEES

Requirements of Training

From the information now available, it appears that an augmented course of training for health inspectors is required, which would:

- (a) Necessitate only relatively short periods away from home for young married men;
- (b) Give incentives for cadets to remain in the profession;
- (c) Increase the number of hours of tuition to 'about 1,000';
- (d) Allow practical training to be associated closely with formal tuition;
- (e) Cater for trainees scattered throughout the country.

There was also a suggestion from several local authorities that the course should be divided into two or three parts, so that trainees could be examined on every aspect of the syllabus and, presumably, be of more use to employing authorities during the training period.

To devise a new course in detail clearly requires expert knowledge of the duties of a health inspector of all the subjects covered and of educational requirements. If a fundamental revision of the form and content of a course is to be attempted, this must be the task of an expert syllabus committee. Using the existing syllabus as a basis at this stage, it is possible to show how the requirements listed in the previous paragraph can be met.

Proposed Course

The present syllabuses for chemistry and physics (140 hours in total) appear to be very similar to those used for School Certificate and certificate of engineering classes. It seems realistic, therefore, to recognise this by requiring passes in these subjects, either to School Certificate or certificate of engineering level, as prerequisites to the professional course. For those candidates who lacked either or both prerequisites, arrangements could be made for special classes or for attendance at existing classes for School Certificate or certificate of engineering, depending upon the numbers available at any one centre. Correspondence tuition is, in any case, available in these subjects.

The course proper would consist largely of professional subjects involving either correspondence tuition or part-time classes of the equivalent of seven hours per week, together with three block courses. It is unlikely that there would be enough students at any centre other than Auckland to warrant special classes, so that the main reliance would need to be put upon correspondence tuition. Wherever numbers were sufficient either evening classes (for two or three nights a week) or, preferably, day-release classes (one day a week in the employer's time) could be arranged.

All the students would be required to attend the block courses, two of them for four weeks at the Central Institute of Technology, and one for three weeks at Massey University College of the Manawatu. During these periods they would carry out practical work, undertake guided visits, and attend specialist lectures, thus covering those parts of the course that do not lend themselves to part-time or correspondence tuition.

A diagram of this type of course and a tentative subject breakdown are shown overleaf. The course would provide 863 hours of tuition (excluding physics and chemistry) as compared with the present 800 hours, which includes 140 hours of tuition in physics and chemistry. In other words, the proposed course would allow an additional 200 hours' tuition in professional subjects.

The course could be arranged in two stages, each of approximately a year, with an examination at the end of the first stage in (say) buildings and factories health and with the final examination at the end of the second stage.

The additional training requirements of Health Department inspectors could be met either by an extension of the final year and an additional option in the final examination, or by a special course at the Central Institute at the time of their induction into the Department of Health.

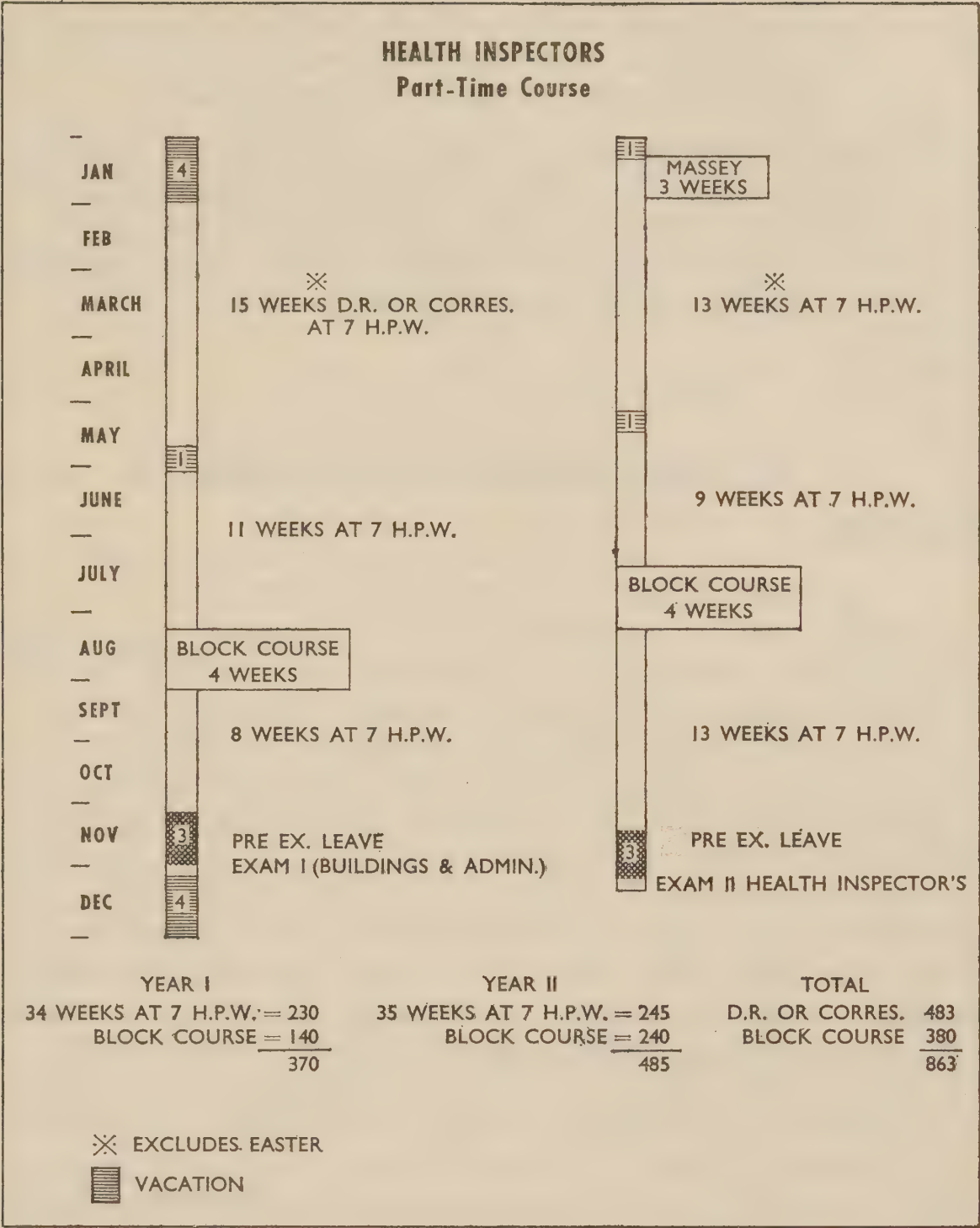
It is stressed that the length of the course, the number of hours of tuition, and the subject breakdown are all tentative at this stage, and should be regarded largely as illustrative.

HEALTH INSPECTOR TRAINEES

Subject Breakdown

Section and Stage	Subject	Hours	Existing Syllabus Part	Total Hours
Health and the Community—				
Stage I	Basic Science	60	New	
	Environment and Health	10	1 (pt), 2 (pt)	
	Industrial Health and Relations	85	3, 12 (pt), 13-16	
	Social Health	20	22, 23	
	Other Subjects	20	New	195
Stage II	Infectious Diseases	50	6	
	Food	160	18, 24	
	Other Subjects	60	New	270
				465
Health Engineering—				
Stage I	Building Science	80	7, 8	
	Plumbing and Fittings	80		160
Stage II	Water and Drainage	110	10, 17	
	Other Subjects	50	New	160
				320
Government, Law, and Administration—				
Stage I	Local Government, Central Gov- ernment, and the Citizen	4	1 (pt)	
	Statistics	5	2 (pt)	
	Statutes and Regulations	8	21 (pt)	
	Inspection and Office Procedure	6	19 (pt), 20	23
Stage II	Statutes and Regulations	32	21	
	Inspection and Office Procedures	10	19 and 20 (pt)	
	Other Subjects	13	New	55
				78

51. We point out, however, that such a course could be implemented only if there were sufficient students and that in any case these part time proposals could not be put into effect immediately. Discussions between the Education and Health Departments will be required and the work of organising instruction then undertaken. It seems, therefore, that such a course could not come into operation before 1964 at the earliest.



Recommendations

We recommend:

- (6) That the present full-time training course be continued for departmental trainees and those sponsored by local authorities who can arrange to attend in Wellington, but the course should be modified as follows:
 - (a) The amount of theoretical instruction in technical subjects be increased to a minimum of approximately 1,000 hours.

- (b) The course be reorganised to extend over two years to provide for additional practical work combined with the lengthened period of theoretical instruction.
- (7) That the Department of Health implement an alternative system of paid pupilage and part-time instruction and attendances on block courses (as outlined in the paper presented by the Education Department) for cadets and those unable to attend the Central Training Course.

VI. RECRUITMENT OF TRAINEES

Cadetship

52. For many callings the cadet system of recruitment has definite advantages and the suggestion that the Department of Health recruit trainee inspectors direct from school has been put forward from time to time and has received careful consideration. Recruitment direct from school with the assistance of vocational guidance officers would no doubt widen the field and would open up possibilities of sharing with other professions the better students, some of whom may be interested in adopting health work as a career. Boys leaving school without an interruption in their studies would naturally find it much easier to learn the technical and scientific sections of an inspector's work. But we were told that the Department's previous attempts at cadet recruitment had not been notably successful. The Department promoted a scheme for the recruitment of cadets in 1955. For several reasons the scheme did not prove a success and was discontinued a few years later. Cadets were recruited usually about the ages of 16 and 18 years. The type of work they could be employed on until such time as they were old enough to sit for the qualifying examination (21 to 22 years) was mainly clerical. They often decided for themselves that the three or four years they would have to wait between commencing work with the Department and entering the training class would be sufficient to get them well advanced in their studies towards qualification in some other profession, for example, law or accountancy, and that such study was a better use of their time than attendance at evening classes for instruction in some skill related to the work of an inspector, for example, plumbing. A number of the boys who had entered with the object of becoming health inspectors became dissatisfied with clerical work and left to find other positions, but, of the remainder, several have been accepted for the training course and have qualified as inspectors.

53. There is no doubt that provision should be made by the Department and some of the larger local authorities for the recruitment of a limited number of cadets each year. It would be necessary to ensure that during the earlier years they were gainfully employed and that their interest was held until such time as they could embark on the formal training of the inspectors course. To ensure that an interest is taken in these young men and that they are directed along the right lines it is considered essential for them to be attached to the staff of the senior inspectors of health in the larger district offices or the chief health inspectors of the larger local authorities. We think it necessary, however, that the number recruited each year should be strictly limited and that the appointment of cadets should in every case be approved by the Director-General of Health, to ensure that regular checks are made throughout the training period on the nature of the training received.

Paid Pupilage

54. The system which has been adopted in the United Kingdom by the Public Health Inspectors Education Board is very similar to that which has been operating in New Zealand for the past 12 years. Pupils are required to attend a college and, while training for a qualification, are paid a salary by their employer.

55. The end result is, of course, the same as by payment of a bursary, but the term bursary is favoured as it is the one that is commonly used in New Zealand where students are paid a sum of money to enable them to complete their studies. The bursary system is more fully considered in a section elsewhere in this report.

Female Trainees

56. The suggestion put forward by the National Health Institute that health inspector positions be open to women was an interesting one. The nature of the duties is such that there would be limitations to the usefulness and effectiveness of women, but, probably, they could be usefully employed with large local authorities. However, it is a matter for the local authorities to decide for themselves if there are sufficient duties in their local authority areas which are particularly suited to women health inspectors. There have been and are female health inspectors in New Zealand. The legal position is that if any local authority wishes to sponsor a woman candidate for training, it is at liberty to do so, and accordingly there is no need for any recommendation from us on this matter.

Intake of Recruits

57. We were made well aware of the existing shortage of inspectors, although, on examination, we concluded that this shortage is not as great as is commonly thought to be the case. Consideration was given to the possibility of stepping up recruitment from overseas to assist in overcoming the present shortage, but it was decided that this would have but limited value. Past experience has demonstrated that some immigrants have difficulty in settling down and adjusting themselves to our different conditions and legislation and there is general agreement that a locally trained and qualified inspector is usually more acceptable and suitable for the work here. For these reasons most employing agencies prefer to interview an applicant before a firm offer of employment is made. Inquiries from qualified inspectors in the United Kingdom and elsewhere are being received from time to time and suitable applicants are encouraged to come to this country and are directed to potential employers.

58. Although there is likely to continue to be a steady trickle of inspectors available from overseas we are convinced that efforts must in the main be directed towards solving the problem by attracting suitable recruits and training them specially for inspection work under New Zealand conditions.

59. At 1 April 1953 the total staff of departmental inspectors was 73. During the 10 year period 1952-61 the actual loss through death, resignation, or retirement was 28 or 38.78 per cent or roughly 4 per cent per annum. Accordingly a figure of 5 per cent seems a reasonable basis for assessment of staff wastage on a national scale. There are at present approximately 100 departmental inspectors and 150 employed by local authorities and using a figure of, say, 5 per cent for normal staff wastage there would be approximately 13 replacements required next year. To this must be added an allowance for population growth of say one additional inspector for every 10,000. So that with an average increase of 60,000 per annum an extra six inspectors would be required each year. A careful analysis of staff requirements to implement the proposal for local authorities to employ their own inspectors and cancel any existing arrangements for servicing by departmental inspectors shows that an additional 73 inspectors would be required. To overtake this shortage in five years an additional average intake of 15 per annum would be required. Therefore, the average intake over the next five years would total 34 for the whole of New Zealand.

Recommendations

We recommend:

- (8) (a) That the Department of Health and local authorities requiring inspectors be encouraged to take concerted action to recruit sufficient staff, with an initial intake of at least 34 in 1964 and a progressively increased number each year to provide for staff wastage and population increase.
- (b) That the Department of Health keep the staffing position under continuous review to ensure there is no recurring shortage of trained inspectors.
- (9) That the present system of recruitment of adults be continued but provision also be made for the employment of cadet inspectors recruited straight from school. The approval of the Director-General for the employment of a cadet be obtained in each instance, and each cadet be registered by the Department and his training be supervised until he is qualified.

VII. BURSARIES

60. For 14 years now the Department of Health and some local authorities have paid trainee inspectors while they have been undergoing the training period. This payment has been variously called a salary, an assistance allowance, a field allowance, and a bursary.

61. The principle of paying students while they are studying for their qualification is now so entrenched in both Government and private enterprise employment that it is not necessary to advance arguments to justify it. The question to be considered is who should meet the cost. The Committee carefully considered a suggestion submitted by Treasury for a system of levies on local authorities to meet the cost of training, but it was agreed that such a system would not bear equitably on all local authorities. As there were also other practical difficulties, we concluded that such a scheme was not feasible and an alternative practical proposition necessary. Since the central training scheme has been operating, 196 students have attended. These have been sponsored by the 17 agencies and in the numbers shown as follows:

Auckland City Council	-	-	1
Rotorua County Council	-	-	1
Whakatane County Council	-	-	1
Wanganui City Council	-	-	1
Hastings City Council	-	-	1
Stratford Borough Council	-	-	1
Palmerston North City Council	-	-	2
Lower Hutt City Council	-	-	3
Wellington City Council	-	-	19
Dunedin City Council	-	-	2
Invercargill City Council	-	-	1
Colombo Plan	-	-	13
Department of Labour	-	-	19
Army Department	-	-	2
Fijian Government	-	-	3
Western Samoan Government	-	-	2
Department of Health	-	-	124

62. It will be seen that, whilst the Government has borne the cost to a great degree, a few local authorities have also contributed more than their share to the pool of trained inspectors. We were informed of instances of local authorities which have not been prepared to meet the cost of their own trainees attracting newly qualified inspectors away from their original sponsoring employers – in some instances before they had completed service under their bonds. Complaints from certain local authorities that such instances were unfair seem justified.

63. The present arrangement is much less tenable now that the policy has been altered to permit departmental trainees to transfer their bonds to any local authority approved by the Director-General. The positions of inspectors are becoming interchangeable between the Department and local authorities and vice versa. As the only avenue of employment is limited to either Government or local body service, it appears to us that the Government should undertake the cost of training health inspectors in order to be fair to those local authorities that are trying to solve their staff shortages problem by supporting the central training scheme. It is not suggested that the bonding of students for a period of three years following qualification is not fair and reasonable. This should be continued, but bursaries should be granted by Central Government to approved students sponsored by any agency.

Recommendation

We recommend:

- (10) That the Central Government make available annually a sufficient number of bursaries of an amount which would provide an adequate sustenance allowance for approved trainees sponsored by either the Department of Health or any local authority to attend the full-time course in Wellington.

VIII. IN-SERVICE TRAINING

Refresher Courses

64. The duties of an inspector, touching as they do on nearly every phase of human activity, are admittedly of an arduous and complex nature. In common with other professional men, he must keep abreast of modern discovery and advancing technique if he is to perform his duties with any degree of efficiency. Furthermore, progress in environmental sanitation in most communities can only be achieved slowly and over a period of years. Progress may depend largely on the drive and initiative of the inspector and it is often very difficult to measure advances that are made. For these reasons, it is necessary for him to refresh his studies from time to time. In 1957 the Department of Health, with the approval of the Minister, introduced short refresher courses for inspectors as a permanent feature of the Department's in-service training programme. Since then courses have been conducted each year at Massey and Lincoln Agricultural Colleges to provide all departmental and local authority inspectors with an opportunity of attending refresher courses at five-yearly intervals throughout their careers. Some 20 to 30 inspectors have attended each of these residential courses where, by means of a panel of lecturers and group discussions, a wide range of subjects including, for example, synthetic detergents, the new insecticides and rodenticides, modern health education techniques, radiological hazards, and modern developments in food handling and sanitation, have been dealt with.

65. The result of a careful evaluation of these refresher courses has confirmed that they have been an unqualified success. Representatives of the Department assured us that this type of gathering and group instruction is of great value in raising the level of technical knowledge of inspectors and boosting morale and has undoubtedly resulted in the efficiency of those attending.

66. A copy of the programme for the last refresher course held at Massey College in the North Island is attached as Appendix VI to this report.

67. The scheme for refresher courses has been fully supported by all local authorities which have been invited to send inspectors and is now well established as an integral part of in-service training for inspectors in New Zealand. The scheme is clearly of value to inspectors and of benefit to the community they serve, and, in our opinion, should be continued.

Special Short Courses

68. In addition to the established refresher courses, there will arise from time to time the need for special training of selected inspectors to meet special requirement. Examples of these training needs are the use of instruments to monitor radiological fall-out, the use of instruments in detecting degrees of air pollution and smoke nuisance, civil defence, the introduction of new specialised legislation which calls for control measures by inspectors, or the introduction of a system of grading of restaurants requiring inspectors to learn evaluation techniques.

69. The obvious need for uniform procedures to be adopted by inspectors scattered all over the country in dealing with any of these new developments would require to be met by the organisation of short courses of instruction from time to time and this is a matter which should receive the attention of the Department of Health.

Post-graduate Courses

70. Mention has already been made of post-graduate courses at university level, but this will only be possible when the prospects and promotional opportunities for inspectors are competitive with professional workers in other fields. There has always been a proportion of inspectors who, having passed the Inspectors Qualification Examination, have felt the need for continuing their studies to obtain additional examination qualifications. The Royal Society of Health has in the past catered for this group with the Examination in Sanitary Science as applied to Buildings and Public Works, which with a somewhat revised syllabus is now known as the Diploma in Health Engineering Examination. Both these examinations have served a very useful purpose in encouraging inspectors to obtain a wider knowledge of sanitation and hygiene and so develop their confidence as inspectors. The value of these qualifications has been recognised in a tangible form by certain local authorities including in the agreements which cover conditions of employment of inspectors

a provision for payment of additional remuneration for those who have obtained post-graduate qualifications. Unfortunately, there has not been a course of instruction for these examinations available in New Zealand for some years and students are compelled to obtain tuition by means of a correspondence course conducted by a private tutorial concern in Australia. This places a difficulty in the way of intending candidates and there is the further disadvantage that some part of the teaching syllabus is not quite suitable for New Zealand conditions and legislation. There is a continuing demand among inspectors for facilities for coaching for this examination in New Zealand and this should be encouraged. It seems wrong, however, that inspectors should be dependent on overseas countries for coaching for an examination conducted and recognised in New Zealand and it is suggested that this is a matter that should be taken up with the Education Department with a view to organising a suitable course of instruction by the Technical Correspondence School. (The syllabus for this Diploma is attached as Appendix XII.)

71. Apart from the university examinations mentioned earlier, the Diploma in Health Engineering seems to be the most appropriate post-graduate qualification for inspectors within New Zealand and it is recommended that local authorities and the Department of Health give full recognition to this examination by means of additional remuneration to those obtaining the qualifying certificate.

Higher Education at Professional Level

72. University degree courses in sanitation have been available for some years in South Africa and in a number of universities in the United States of America. In 16 States in America a bachelor's degree in sanitation is a prerequisite to registration as a sanitarian, the equivalent to a health inspector in this country. Everywhere there is recognition of the need for higher education and training for inspectors and sanitarians and for improved status up to professional level. This is a trend that is likely to continue in developed countries and is one that should be fostered here if we are to keep abreast of the modern conceptions of public health services. As mentioned earlier, there is scope for a limited number of university trained men for the higher inspectorial posts in the larger local authorities and in the Department of Health. Arrangements should be put in train now for degree courses to be available at universities so that the cadet system may be properly developed. The proper recognition and gradual elevation of status to professional level would do much to encourage school leavers to take up the profession of health inspection as a career and this would go a long way towards solving the staff shortage problem. There is no doubt a greater number of

suitable recruits could be obtained direct from schools if a systematic and organised recruitment campaign were undertaken and the interest of pupils with a bent for public health work captured. A recruiting campaign cannot succeed unless there is a clear understanding of future prospects for the recruits and we believe this is one of the main obstacles in the way of obtaining a sufficient number of suitable candidates.

Recommendations

We recommend:

- (11) That the university authorities be approached with a view to arranging provision for further training at university level for selected cadets or for students who have qualified as inspectors.
- (12) That the present refresher courses for inspectors conducted by the Department of Health at regular intervals be continued.
- (13) That the Department of Health accept responsibility for arranging short courses for inspectors as necessity arises and for assisting local authorities with the in-service training required to ensure that procedures are uniform and that inspectors are kept up to date.
- (14) That the Department of Education be requested to arrange, through the Technical Correspondence School, a course of instruction for students wishing to study for the Diploma in Health Engineering Examination now being conducted in New Zealand by the Examination Board of the Royal Society of Health.
- (15) (a) That local authorities and the Department of Health give full recognition to the Sanitary Science and Diploma of Health Engineering as additional qualifications for inspectors.
(b) That the present policy of some local authorities in granting additional remuneration to those who have obtained either of these additional qualifications be given general recognition.

IX. PAY AND STATUS

73. There can be no doubt that pay and status are closely related in the public mind. It is not possible in this report to go very deeply into the question of adequate rewards for health inspectors and to

compare them with other callings. We believe, however, that inspectors generally do not enjoy the pay and status commensurate with their value to the community and that this has a very important bearing on the flow of entrants. The payment of better salaries would, we believe, help to solve the staff shortage problem and provide needed incentive to those established in the profession.

74. By the very nature of their responsibilities local authorities employ several, or, according to size, many, "inspectors" to discharge a variety of duties. Naturally there must be concern to preserve some degree of relativity in salary scales among these groups of "inspectors". We suggest, however, that if a local authority is seeking the basis for a salary differentiation in favour of health inspectors, it need do no more than consider that, of the several classes of inspectors, the health inspector is the only one who has had extensive formal training and is required by statute to be qualified by examination. This training includes, as an example, building construction up to the level of structural calculations and health inspectors are, therefore, qualified to act also as building inspectors and, in fact, a number are at present holding the additional appointment of building inspector for counties, boroughs, and cities.

Recommendation

We recommend:

- (16) (a) That the pay of inspectors be reviewed and raised where necessary to provide a substantial increase over ruling rates for duly qualified inspectors and sole charge inspectors.
- (b) That the status and conditions of employment of inspectors should be raised to a level commensurate with their qualifications and importance to the community.

X. THE EXAMINATION AUTHORITY

75. The present examination authority is the New Zealand Examination Board of the Royal Society of Health, London. Although this body represents and is answerable to the parent body, it is given a completely free hand and is, for all practical purposes, autonomous. The Board comprises three members representing the Royal Society of Health, including a health inspector elected by the New Zealand Institute of Health Inspectors, a representative

of the Department of Health, and the secretary. This Board has functioned very satisfactorily over the years and we consider it is quite adequate in all respects to continue conducting the qualifying examinations for health inspectors and the examination for the diploma in health engineering. We recommended elsewhere investigation of the possibility of arranging a university diploma examination and, in that event, the qualifying examination would come under the auspices of the university, which would take over the complete control of the prescription and the qualifying examination.

Recommendation

We recommend:

- (17) That the New Zealand Examination Board of the Royal Society of Health as now constituted remain as the examining authority for the Public Health Inspectors Diploma and the Diploma in Health Engineering.

XI. TEACHING SYLLABUS

76. Attached as Appendices IX and X to this report are copies of the syllabuses of the central training scheme and the Public Health Inspectors' Education Board in the United Kingdom.

77. An analysis of both syllabuses will show a very marked similarity in the number of hours of theoretical instruction and the subjects taught.

78. Taking into account the prescribed duties for health inspectors, we do not consider it is possible to depart very much from the course of study indicated in the prospectus. If there is any modification of the present training system in New Zealand, the syllabus must be reviewed and it may be found necessary to vary the number of hours allocated to each subject and the order in which subjects are taught to fit in with any practical training schedule. We consider that in any event the syllabus should be regularly reviewed with a view to ensuring that it remains related to training needs and think there would be merit in having a committee or a panel of experts to advise the Department of Health and the Examination Board in this regard.

Recommendation

We recommend:

- (18) That the Department of Health, in consultation with the New Zealand Examination Board of the Royal Society of

Health, set up an expert syllabus committee to draw up detailed courses of instruction for the Public Health Inspectors Diploma and the Diploma in Health Engineering and to keep those syllabuses under review.

XII. DESIGNATION OF INSPECTORS

79. The amendment to the Health Act in 1956 brought about a change of title for sanitary inspectors who were thereafter designated city or borough health inspector or county health inspector.

80. This was a very desirable change, but it had the effect of causing some confusion in the mind of the general public who found it difficult to distinguish between health inspectors and inspectors of health. This was particularly so with respect to the relative position of the Chief Health Inspector of a city or borough and the Senior Inspector of Health. In some cities the more experienced inspectors on the staff of the city council were designated senior health inspectors and this added to the confusion.

81. The various designations and categories of inspectors of health and health inspectors are as follows:

Local Authority	Department of Health
Trainee Health Inspector	Cadet Inspector of Health.
Health Inspectors	Trainee Inspector of Health.
District Health Inspector	Grade III Inspector of Health.
Senior Health Inspector	Grade II Inspector of Health.
Deputy Chief Health Inspector	Grade I Inspector of Health.
Chief Health Inspector	Special Grade Inspector of Health.
	Senior Inspector of Health.
	Principal Inspector of Health.

82. There is merit in the suggestion that the number of designations and categories should be reduced to a minimum and be clearly descriptive and distinctive to reduce any possible confusion.

83. This question of designation is not an unimportant one from the point of view of staff and the general public and we believe that we should take this opportunity to put forward a firm recommendation for any desirable changes.

84. In view of the amendment to the Act and the fact that it would need legislation to change the designation of city, county, and borough health inspectors it is not suggested that any change should be made for local authority health inspectors except that there

should be an additional category of "sole charge" health inspector which may be defined as a single inspector employed by a local authority.

85. The matter is more easily dealt with as far as the Department of Health is concerned, however, as we know of no statutory limitation on the designations of its inspectors. We think it would avoid some risk of confusion if the Department adopted the following designations for its inspectors:

Cadet Inspector of Health.
Trainee Inspector of Health.
Inspector of Health.
Senior District Inspector of Health.
Supervisory District Inspector of Health.
Regional District Inspector of Health.
Chief Inspector of Health.

Recommendation

We recommend:

- (19) That the Department of Health adopt the suggested designations for its inspectors and care should be taken in local authority circles to avoid designations that would be liable to cause confusion with departmental inspectors.

XIII. SUMMARY OF RECOMMENDATIONS

(1) That the Department of Health and the local authorities recognise the principle of interchangeability of positions as inspectors in both Government and local authority service.

(2) That the duties as outlined be accepted as the acknowledged duties of a sole charge health inspector.

(3) That the duties as outlined be accepted as the acknowledged duties of inspectors of health.

(4) That provision be made by the Department of Health for additional intensive training of qualified officers for appointment as inspectors of health to cope with those extra duties which are exclusively departmental in nature.

(5) (a) That the prerequisite standard of education for a training course leading to the health inspectors diploma be a minimum of the New Zealand School Certificate or its equivalent, including chemistry or physics or general science up to New Zealand School Certificate standard.

(b) That recruitment of candidates with University Entrance be encouraged.

(6) That the present full-time training course be continued for departmental trainees and those sponsored by local authorities who can arrange to attend in Wellington, but the course should be modified as follows:

(a) The amount of theoretical instruction in technical subjects be increased to a minimum of approximately 1,000 hours.

(b) The course be reorganised to extend over two years to provide for additional practical work combined with the lengthened period of theoretical instruction.

(7) That the Department of Health implement an alternative system of paid pupilage and part-time instruction and attendance on block courses (as outlined in the paper presented by the Education Department) for cadets and those unable to attend the Central Training Course.

(8) (a) That the Department of Health and local authorities requiring inspectors be encouraged to take concerted action to recruit sufficient staff, with an initial intake of at least 34 in 1964 and a progressively increased number each year, to provide for staff wastage and population increase.

(b) That the Department of Health keep the staffing position under continuous review to ensure there is no recurring shortage of trained inspectors.

(9) That the present system of recruitment of adults be continued, but provision also be made for the employment of cadet inspectors recruited straight from school. The approval of the Director-General of Health for the employment of a cadet be obtained in each instance and each cadet be registered by the Department and his training be supervised until he is qualified.

(10) That the Central Government make available annually a sufficient number of bursaries of an amount which would provide an adequate sustenance allowance for approved trainees sponsored by either the Department of Health or any local authority to attend the full-time course in Wellington.

(11) That the university authorities be approached with a view to arranging provision for further training at university level for selected cadets or for students who have qualified as inspectors.

(12) That the present refresher courses for inspectors conducted by the Department of Health at regular intervals be continued.

(13) That the Department of Health accept responsibility for arranging short courses for inspectors as necessity arises and for

assisting local authorities with the in-service training required to ensure that procedures are uniform and that inspectors are kept up to date.

(14) That the Department of Education be requested to arrange through the Technical Correspondence School a course of instruction for students wishing to study for the Diploma in Health Engineering Examination now being conducted in New Zealand by the Examination Board of the Royal Society of Health.

(15) (a) That local authorities and the Department of Health give full recognition to the Sanitary Science and Diploma of Health Engineering as additional qualifications for inspectors.

(b) That the present policy of some local authorities in granting additional remuneration to those who have obtained either of these additional qualifications be given general recognition.

(16) (a) That the pay of inspectors be reviewed and raised where necessary to provide a substantial increase over ruling rates for duly qualified inspectors and sole charge inspectors.

(b) That the status and conditions of employment of inspectors should be raised to a level commensurate with their qualifications and importance to the community.

(17) That the New Zealand Examination Board of the Royal Society of Health as now constituted remain as the examining authority for the Public Health Inspectors Diploma and the Diploma in Health Engineering.

(18) That the Department of Health in consultation with the New Zealand Examination Board of the Royal Society of Health set up an expert syllabus committee to draw up detailed courses of instruction for the Public Health Inspectors' Diploma and the Diploma in Health Engineering and to keep the syllabuses under review.

(19) That the Department of Health adopt the following designations for its inspectors:

Cadet Inspector of Health.

Trainee Inspector of Health.

Inspector of Health.

Senior District Inspector of Health.

Supervisory District Inspector of Health.

Regional District Inspector of Health.

Chief Inspector of Health.

23/4/63

E. M. H. KEMP,
(Chairman).

APPENDICES

APPENDIX I

INDIVIDUALS AND ORGANISATIONS MAKING REPRESENTATIONS

County Councils—

Featherston
Franklin
Hutt
Makara
Manawatu
Manukau
Matamata
Otamatea
Otorohanga
Rotorua
Tauranga
Waimairi
Wairarapa South
Waitemata
Wallace

Municipalities—

Auckland city
Christchurch city
Dunedin city
Feilding borough
Green Island borough
Hamilton city
Lower Hutt city
Mt. Eden borough
Mount Roskill borough
Nelson city
New Plymouth city
Onehunga borough
Otahuhu borough
Palmerston North city
Putaruru borough
Rotorua city
Tauranga borough
Wellington city

Others—

Mr T. W. Adams, Principal Inspector of Health, Department of Health.
Institute of New Zealand Health Inspectors (Inc.).
New Zealand Examination Board of the Royal Society of Health.
National Health Institute.
The Treasury.

APPENDIX II

FUNCTIONS AND DUTIES OF A HEALTH INSPECTOR AS DESCRIBED BY THE INSTITUTE OF NEW ZEALAND HEALTH INSPECTORS (INC.)

Functions and Duties of the Health Inspector

The public health inspector carries out a variety of duties which are investigational and educational in nature. In addition, he is required to interpret and enforce Public Health Acts, regulations, and bylaws.

I. Communicable Disease

The investigation and control of communicable disease has been and will continue to be the basic activity of the Public Health Service.

The health inspector has very wide powers under legislation controlling communicable disease and must show discrimination and tact in using them.

An essential part of his duties in this field must always be the carrying out of surveys of an epidemiological nature, in cooperation with the medical officer of health and other professional groups in maintaining a constant surveillance to insure that the public are adequately protected.

II. *Food Sanitation*

By inspection and education the health inspector endeavours to ensure that all food used for human consumption is produced and distributed in a hygienic manner in order that the consumer will receive a safe food which is true to label, fresh, and clean. To perform this duty satisfactorily the inspector must be familiar with the legislation designed to control premises, vehicles, and persons operating in the food industry.

Of equal importance, to understand the reasons for the legislation, he must have an all-embracing appreciation of the factors and principles involved in food technology.

III. *Environmental Sanitation*

3. (a) *The Prevention and Abatement of "Nuisances"*

Section 29 of the Health Act 1956 defines nuisances:

An important duty of the health inspector is to prevent these sets of circumstances arising. Where, however, a nuisance does exist it is the duty of the inspector to take remedial steps. The inspector has power to abate a nuisance himself where he considers this necessary and this also requires the exercise of sound judgment, needing practical knowledge. He must understand the effects on health of nuisances and know how to control them in order to be able to advise the public.

3. (b) *Insect and Vermin Control*

This is usually dealt with as a nuisance and consists of the extermination of all domestic pests liable to cause inconvenience or danger to health.

In order to advise on their eradication he must be familiar with their life cycle, breeding habits, haunts, and other preferences. He must have a sound knowledge of refuse storage, collection, and disposal; poultry keeping and composting.

The economic losses caused by the ravages of rats are too well known to need further enlightenment in these submissions.

3. (c) *Housing*

The health of the people is closely related to the standard of their housing.

The inspector must be familiar with the legislation concerning drainage and plumbing, building construction, overcrowding, minimum standards for buildings used for human habitation, cleansing orders, closing orders, and demolitions of dilapidated dwellings.

It is recognised that it will be many years before any but the largest local authorities in this country can employ specialist drainage and plumbing and building inspectors.

3 (d) *Public Utilities*

The health inspector is responsible for ensuring that proper hygienic standards are observed in such places as camping grounds, swimming

pools, bathing beaches, parks, showgrounds, racecourses, public halls and theatres, public and private hotels, boarding houses, and more recently, motels.

3. (e) *Water Supply and Sewage Disposal*

Because of the danger of water as a vehicle for the spread of pathogenic organisms, he must be fully conversant with the basic principles relating to sources of supply, methods of treatment, and means of distribution of water for domestic use.

Similarly the unsatisfactory disposal of human wastes can lead to epidemics of disease.

In smaller districts the health inspector is the only person qualified to deal with these problems. In larger areas, because of his contact with the public, his technical knowledge in this field must be such as to enable him to cooperate fully with the engineer.

3. (f) *Offensive Trades*

Offensive trades can and do give rise to nuisances detrimental to health and therefore come into the sphere of the health inspector. With the increase in the industrial activities in even the smallest communities, and the complex technical problems arising therefrom, the inspector has many difficult problems to determine. He must ensure that the best practical steps are taken, in cooperation with the appropriate technician, to minimise the adverse effects on the surrounding community. The increasing problem of air pollution over the major urban areas will become increasingly a problem for the health inspector.

3. (g) *Health Education*

By mere contact with the public the health inspector is disseminating public health education in his day-to-day duties. In addition to this he will often be called upon by various groups to discuss specific aspects of public health.

From the foregoing it will be readily appreciated that, to perform his duties efficiently, the health inspector requires a sound knowledge of the following subjects.

Chemistry, physics, bacteriology, parasitology, building construction and allied trades, heating and ventilation, water supply, treatment and distribution, refuse collection and disposal, characteristics of sewage, its reticulation and disposal and law relating to public health.

The following is an extract from the "World Health Organisation" Technical Report, Series No. 104:

Training of Health Inspectors

"The training of health inspectors must be based on a sound knowledge of the basic sciences such as physics, chemistry, bacteriology, parasitology, epidemiology, anatomy, and physiology, which are fundamental to the practice of environmental sanitation. The training programme must make provision for adequate practical training. Health education is playing an increasing part in securing hygienic food practices and it is important that personnel should be instructed in its principles and techniques.

“Provision should be made for advanced training, either of a general nature or in specialist subjects. In the second report of the Expert Committee on Environmental Sanitation, it was envisaged that some health inspectors may graduate in sanitary science or hygiene at university level. This type of training should certainly be followed in highly developed countries, and should be the ultimate objective in others.”

APPENDIX III

Extract from *Report of the Working Party on the Recruitment, Training, and Qualifications of Sanitary Inspectors 1953*.

Prescribed Duties

24. As stated above the Minister of Health has power to prescribe the duties of sanitary inspectors throughout the whole country. This he has done, in the case of London in article 19 of the Sanitary Officers Order 1926 and in the case of other parts of England and Wales in article 27 of the Sanitary Officers (Outside London) Regulations 1935. The latter article reads as follows:

“27. The sanitary inspector, as regards the district for which he is appointed shall, except as provided in article 28 of these regulations” (which permits the duties to be distributed among two or more sanitary inspectors)—

- “(1) Perform under the general direction of the medical officer of health all the duties imposed on a sanitary inspector by statute and by any orders, regulations, or directions from time to time made or given by the Minister, and by any bylaws or instructions of the local authority applicable to his office;
- (2) By inspection of his district, both systematically and at intervals as occasion requires, keep himself informed of the sanitary circumstances of the district and of the nuisances therein that require abatement;
- (3) Report to the local authority any noxious or offensive businesses, trades, or manufactories established within his district, and the breach or non-observance of any bylaws or regulations made in respect thereof;
- (4) Report to the local authority any damage done to any works of water supply or other works belonging to them, and also any case of wilful or negligent waste of water supplied by them, or any fouling by gas, filth, or otherwise of water used or intended to be used for domestic purposes;
- (5) From time to time, and forthwith upon complaint, visit and inspect the shops and places kept or used for the preparation or sale of any article of food to which the provisions of the statutes and regulations in that behalf apply, and examine any article of food therein, and take such proceedings as may be necessary:

Provided that in any case of doubt arising under this paragraph, he shall report the matter to the medical officer of health, with the view of obtaining his advice thereon;

- (6) If so directed by the local authority, carry out the duties of a sampling officer under the Food and Drugs (Adulteration) Act 1928;
- (7) If so directed by the local authority, inspect premises used as dairies for the purposes of the Milk and Dairies (Consolidation) Act 1915 or the Milk and Dairies (Amendment) Act 1922 or any Act amending those Acts, and any orders or regulations made thereunder;
- (8) Give immediate notice to the medical officer of health of the occurrence within his district of any infectious or epidemic disease or other serious outbreak of illness; and whenever it appears to him that the intervention of such officer is necessary in consequence of the existence of any nuisance injurious to health, or of any overcrowding in a house or of any other conditions affecting the health of the district, forthwith inform the medical officer of health thereof;
- (9) If so directed by the medical officer of health, remove, or superintend the removal of, patients suffering from infectious disease to an infectious disease hospital, and perform or superintend the work of disinfection after the occurrence of cases of infectious disease;
- (10) If so directed by the local authority, supervise the scavenging of his district or any part thereof;
- (11) If so directed by the local authority, act as officer of the local authority under the Canal Boats Acts 1877 and 1884 and the Rats and Mice (Destruction) Act 1919, and under any orders or regulations made thereunder;
- (12) If so directed by the local authority, act as designated officer for the purposes of the Housing Consolidated Regulations 1925 and 1932;
- (13) If so directed by the local authority, perform duties of inspection under Part I of the Housing Act 1935;
- (14) If so directed by the local authority, superintend and see to the execution of all works which may be undertaken by their direction for the suppression or removal of nuisances;
- (15) Carry out any duties imposed upon him by the local authority with reference to the provisions of the Shops Act 1934 relating to ventilation, temperature, and sanitary conditions;
- (16) Enter from day to day, in a book or on separate sheets or cards provided by the local authority, particulars of his inspections and of the action taken by him in the execution of his duties;
- (17) At all reasonable times, when applied to by the medical officer of health, produce to him his books, or any of them, and render to him such information as he may be able to furnish with respect to any matter to which the duties of sanitary inspector relate;
- (18) As soon as practicable after the 31st day of December in each year, furnish the medical officer of health with a tabular statement containing the following particulars:
 - (a) the number and nature of inspections made by him during the year.
 - (b) the number of notices served during the year, distinguishing statutory from other notices.
 - (c) the result of the service of such notices.”

APPENDIX IV

Extract from *Health (Infectious and Notifiable Diseases) Regulations 1948*

PART IV – DUTIES OF INSPECTORS

11. It shall be the duty of every inspector charged with the investigation and control of infectious diseases to observe and comply with the following directions and requirements, namely:

- (a) On becoming aware in any way of a case or suspected case of notifiable infectious disease, he shall forthwith visit the infected premises and inquire into the causes and circumstances of the case, and shall take such steps as are necessary or desirable to prevent the spread of infection and to remove conditions favourable to infection:
- (b) He shall forthwith report to the medical officer of health, in such form as the Director-General of Health may require, the results of his investigation into every case or suspected case of notifiable infectious disease:
- (c) He shall ensure that any person suffering from a notifiable infectious disease who is being nursed or treated at home is effectively isolated, and, if in his opinion removal to hospital is desirable, he shall notify the medical officer of health accordingly:
- (d) He shall forthwith notify the medical officer of health if he has reason to believe or suspect that any person, whether suffering from an infectious disease or not, is likely to cause the spread of an infectious disease:
- (e) He shall attend to the removal to hospital of any person suffering from a notifiable infectious disease if and when such removal is necessary:
- (f) If any such person is not so removed to hospital, he shall visit the premises concerned from time to time and shall ensure that precautions necessary to prevent the spread of infection are duly observed.
- (g) He shall ascertain whether any inmate of the house wherein a case of infectious disease occurs attends any school as a pupil; and, if so, he shall forthwith instruct the parent or other person in charge of such pupil not to permit him to return to school until the period of exclusion, if any, set out in the Fourth Schedule hereto has been completed, and he shall, in writing, inform the head teacher or person in charge of the school of the occurrence:
- (h) He shall ascertain whether any inmate of the house wherein a case of infectious disease occurs attends any school as a teacher; and, if so, he shall forthwith instruct such teacher not to return to any such school until the period of exclusion, if any, set out in the Fourth Schedule hereto has been completed, and he shall, in writing, inform the head teachers or persons in charge of any such school or schools of the occurrence:

- (j) He shall arrange for the thorough and effective cleansing of any room that may have been occupied by a person suffering from a notifiable infectious disease, and for the cleansing and disinfection of any bedding, clothing, or other things which may, in his opinion have been exposed to infection:
- (k) He shall carry out all disinfection in accordance with instructions issued by the medical officer of health:
- (l) In the case of a patient who has been nursed at home, he shall notify the head teacher or person in charge of the school or schools concerned when cleansing or disinfection has been carried out after recovery from a notifiable infectious disease:
- (m) He shall duly notify the medical officer of health when disinfection or cleansing has been carried out:
- (n) He shall from day to day enter in a book such particulars regarding cases of infectious diseases as may be required, or shall keep such other records as the medical officer of health may require:
- (o) He shall from time to time, at the request of the medical officer of health, produce such books or records for inspection and shall supply such information as may be required with regard to his duties under these regulations:
- (p) Generally, he shall be guided by the medical officer of health and shall carry out the latter's instructions concerning any measures which may lawfully be taken to prevent the outbreak or to check the spread of infectious disease.

APPENDIX V

CENTRAL TRAINING SCHEME 1950-61

Date of Examination	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	Total	Average	Rate
Total candidates	-	15	16	15	14	9	20	17	17	13	18	17	192	16	..
Total candidates from class	-	11	12	7	8	9	13	15	13	10	18	16	151	12.58	..
Departmental candidates passed	-	5	6	6	8	7	10	6	6	9	14	8	90	..	..
L.A. candidates passed	-	7	..	..	..	..	2	5	3	..	2	3	23	..	..
Colombo Plan candidates passed	-	2	4	..	2	2	12	..	..
Private candidates passed	-	..	2	..	1	..	..	..	..	1	..	3	7	..	..
Other candidates passed	-	7	6	2	4	..	4	..	1	3	..	..	36	..	..
Total candidates passed	-	15	14	10	13	7	16	13	14	13	18	16	168	14	87.50%
Total candidates failed	-	..	2	5	1	2	4	4	3	..	..	1	24	2	12.50%
Class candidates failed	-	..	1	1	..	..	1	2	..	..	..	..	7	58	4.63%
Percentage of class passes	-	100%	91.66%	85.71%	100%	71.42%	92.31%	86.66%	100%	100%	100%	100%	Average 93.81%	..	..

NUMBER OF CANDIDATES PRESENTING FOR R.S.H. INSPECTORS CERTIFICATE EXAMINATION 1932-49

Year	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	Total	Average	Percentage
Passed	-	10	15	9	4	2	4	13	9	8	9	5	4	6	10	8	23	13	162	9	63.035
Failed	-	11	17	10	6	5	5	3	1	3	3	3	..	1	3	5	4	7	95	5.28	36.965
Total	-	21	32	19	10	7	9	16	10	11	12	8	4	7	13	13	27	20	257	14.28	..

YEARLY PERCENTAGES WORKED OUT FROM YEAR TO YEAR

Year	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	Average Percentage
Percentage passed	-	-	-	55.5	46.87	47.36	40	81.24	90	72.72	75	62.5	100	85.71	76.92	61.53	85.18	65%	64.74
Percentage failed	-	-	-	44.5	53.13	52.64	66	18.76	10	27.28	25	37.5	..	14.19	23.08	38.47	14.82	35%	35.26

APPENDIX VI

PROGRAMME FOR PUBLIC HEALTH INSPECTORS REFRESHER COURSE HELD
AT MASSEY COLLEGE, PALMERSTON NORTH, FROM MONDAY 26 NOVEMBER
TO FRIDAY 7 DECEMBER 1962

First Day:

Assemble.

Welcome to Massey College – (Dr A. Stewart, Principal).

Epidemiological Approach to Public Health – (Dr C. N. D. Taylor).

Problems in the Evaluation of Disinfectants – (Dr H. T. Knights).

Group Discussions and Their Value – (Dr C. N. D. Taylor).

Second Day:

Talks by Inspectors:

“This Worked Well”.

“What Does A Do Next?”

Radiation and Radiation Hazards – (Mr B. D. P. Williamson).

Communication – (Mr R. M. Waite).

Classification of Waters – (Dr W. Murphy).

Public Relations – (Mr M. R. Jensen).

Third Day:

Infectious Diseases – (Dr N. T. Barnett).

Interviewing and Grievance Interviewing – (Mr R. M. Waite).

Interviewing and Job Selection – (Mr R. M. Waite).

Work Parties:

Compilation of a Budget for an Environmental Programme.

Fourth Day:

Plenary Session:

The Budget Programme discussed.

The Place of the Inspector in Occupational Health – (Dr J. F. Copplestone).

Noise in Industry – (Dr J. F. Copplestone).

Work Parties:

Group 1: Food Hygiene Regulations (Part I).

Group 2: The Health (Registration of Premises) Regulations.

Fifth Day:

Plenary Session:

Group 1: Report and Discussion.

Group 2: Report and Discussion.

Air Pollution – (Mr R. T. Douglas).

The Problem of Management and Design of Food Processing Plants
in Relation to Sanitation Requirements – (Mr J. W. Ward and
Mr J. A. Singleton).

Work Parties:

Functions of Central Government in Environmental Health.

Sixth Day:

Plenary Session:

Group Reports and Discussion on Functions of Central Government in Environmental Health.

Group Discussion:

Staff Relations.

Letter Writing and Reporting – (Mr H. C. McQueen).

Work Parties:

Group 1: Food Hygiene Regulations, Parts III and IV.

Group 2: Food Hygiene Regulations, Parts V to XI and proposed new Part XII.

Seventh Day:

Plenary Session:

Group 1: Report and Discussion.

Group 2: Report and Discussion.

The Inspector and the Law – (Mr K. H. Digby).

Questions and Answers – (Mr K. H. Digby).

Work Parties:

Group 1: The Health (Drainlayers Registration) Regulations 1948.
A standard examination for drainlayers; can a national prescription acceptable to all examiners be introduced?

Group 2: Control of Vermin. A city standard programme for pest control.

Eighth Day:

Plenary Session:

Group 1: Report and Discussion.

Group 2: Report and Discussion.

In-service Training Organisation – (Mr T. W. Adams).

Public Speaking – (Mr D. Garrett).

Work Parties:

N.Z.S.S. 758: Household Septic Tanks including related Codes of Practice.

Report and Discussion.

Ninth Day:

Food: Storage Control and Protection, Seizure and Destruction (Mr T. M. Houston).

Water Supplies Protection Regulations 1961 (Mr T. W. Adams).

The Problem of Sanitation and Chemical Additives in the Food Industry (Mr H. A. L. Morris).

Work Programme (Mr T. W. Adams).

Tenth Day:

Talks by Inspectors:

“I put my foot in it.”

“I meet with obstruction.”

Evaluation of Food Premises (Mr T. W. Adams).

Review.

List of Lecturers and Appointments

- Mr T. W. Adams, Chief Inspector of Health, Division of Public Health, Department of Health.
- Dr N. T. Barnett, Medical Officer of Health, Department of Health, Palmerston North.
- Dr J. F. Copplesstone, Assistant Director, Division of Public Health (Occupational Health), Department of Health.
- Mr K. H. Digby, Office Solicitor, Head Office, Department of Health.
- Mr R. T. Douglas, Chief Chemical Inspector, Division of Public Health, Department of Health.
- Mr D. Garrett, Senior General Tutor, Regional Council of Adult Education, Victoria University of Wellington.
- Mr T. M. Houston, Senior Inspector of Health, Auckland Health District.
- Mr M. R. Jensen, Public Relations Officer, Public Relations Organisation Inc., Palmerston North.
- Dr H. T. Knights, Epidemiologist, National Health Institute, Wellington.
- Mr H. C. McQueen, Commissioner of Apprenticeship, Head Office, Department of Labour, Wellington.
- Mr H. A. L. Morris, Senior Lecturer in Food Technology, Massey College, Palmerston North.
- Dr W. Murphy, Assistant Director, Division of Public Health, Department of Health.
- Mr J. A. Singleton, Superintendent, Massey College Dairy Factory, Massey College, Palmerston North.
- Dr C. N. D. Taylor, Deputy Director, Division of Public Health, Department of Health.
- Mr R. M. Waite, Principal Clinical Psychologist, Division of Mental Health, Department of Health.
- Mr J. W. Ward, Senior Lecturer in Food Technology, Massey College, Palmerston North.
- Mr B. D. P. Williamson, Physicist, Dominion X-ray and Radium Laboratory, Christchurch.

APPENDIX VII

FIELD WORK - INSPECTOR TRAINEES

Trainee's Name _____ Office _____

Health Act	Dates of Inspections												Total
A. Food premises:													
1. Bakehouses (6)	-												
2. Butchers' shops (6)	-												
3. Ice-cream factories (3)	-												
4. Cordial factories (3)	-												
5. Milk and ice-cream shops (6)	-												
6. Groceries and general stores (6)	-												
7. Food factories (3)	-												
8. Eating houses (8)	-												
B. Buildings:													
1. House inspections (6)	-												
2. Building inspections (6)	-												
3. Licensed premises (4)	-												
4. Sub-standard houses (4)	-												
C. Plumbing and Drainage:													
1. Inspecting new work (8)	-												
2. Inspecting old work (6)	-												
D. Refuse Disposal:													
1. Refuse tips (3)	-												
2. Night-soil depots (3)	-												
E. Infectious Diseases:													
1. Diarrhoeal diseases (3)	-												
2. Droplet infections (6)	-												
3. Other diseases (4)	-												
4. Disinfecting chambers (2)	-												

F. Offensive trades:

1. Flock factories (2) -
2. Hide and skin stores (2) -
3. Boiling down works (2) -
4. Other (4) -

G. Water Supplies:

1. Catchment areas (2) -
2. Treatment plants (4) -
3. Tests for chlorine (4) -
4. Swimming baths (2) -
5. Chemical samples (2) -
6. Bacteriological samples (2) -

H. Other Inspections:

1. Hairdressers (4) -
2. Camping grounds (2) -
3. Cattle saleyards (2) -
4. Mortuaries (3) -
5. Shipping inspections (4) -
6. Rodent inspections (4) -
7. Nuisances -
8. Poisons licences -

I. Food and Drugs Act:

1. Milk sampling (6) -
2. Milk sampling (reductase) -
3. Ice-cream sampling -
4. Other foods -

J. Industrial hazards:

1. Paint factories (2) -
2. Accumulator factories (2) -

K. Prosecution procedures:

1. Preparation of case (2) -
2. Attendance at Court (2) -

APPENDIX VIII

THE PUBLIC HEALTH INSPECTORS EDUCATION BOARD

90, Buckingham Palace Road, S.W.1

NEW SYSTEM OF TRAINING AND EXAMINATION FOR THE DIPLOMA FOR APPOINTMENT AS PUBLIC HEALTH INSPECTOR IN ENGLAND AND WALES

The Board's new scheme of training and examination for the Diploma for Appointment as Public Health Inspector in England and Wales consists of a four-years course of full-time practical training under a system of paid pupillage with local authorities, embodying theoretical instruction on a part-time day release basis. Students desirous of undertaking the training will be required to possess a preliminary education qualification approved by the Board. The position of students in training at the commencement of the new scheme will be safeguarded.

Preliminary Education Qualification. Students will be required to produce evidence of having passed an examination of G.C.E. "O" level standard in at least four subjects, including one subject from each of the following four groups, namely:

- (a) English Language.
- (b) Mathematics, or Additional Mathematics, or Pure Mathematics, or Applied Mathematics, or Mechanics, or Technical Drawing.
- (c) Physics, or Chemistry, or General Science, or Chemistry with Physics, or Biology, or Building Science, or Engineering Science.
- (d) An optional subject, which may be selected, if desired, from (b) or (c).

Passes in the above specified subjects at the following examinations will be also accepted as evidence of the required preliminary education:

- Army First Class Certificate of Education
- College of Preceptors Senior or First Class Certificate (including Arithmetic, Algebra and Geometry)
- Engineering Joint Examination Board Common Preliminary Examination
- General Certificates of Education issued by the
 - Associated Examining Board
 - Cambridge University Local Examinations Syndicate
 - Northern Universities Joint Matriculation Board
 - Oxford and Cambridge Schools Examination Board
 - Oxford Delegacy of Local Examinations
 - University of Bristol
 - University of Durham
 - University of London
 - Welsh Joint Education Committee
- Irish Department of Education Secondary School Leaving Certificate Examination
- Matriculation Examination (and all examinations accepted in lieu thereof) of any University in the British Commonwealth
- Northern Ireland Ministry of Education Senior Certificate Examination

Preliminary Examination of the
Chartered Auctioneers' and Estate Agents' Institute
Chartered Insurance Institute
Conjoint Board of Ireland of the Royal College of Physicians and
the Royal College of Surgeons
Institute of Chartered Accountants in England and Wales
Law Society
Royal Institution of Chartered Surveyors
Royal Navy Higher Educational Test (provided passes have been
obtained in two science subjects)
Scottish Leaving Certificate Examination (at lower or higher grade)

In addition, the following certificates will also be recognised as evidence of preliminary education:

Board of Trade Certificate of Competency as
Master, or
First Mate of a foreign-going ship, or
First Class Engineer
National Diploma in Building
Higher National Certificate in Building
Ordinary National Certificate in Building
Royal Society of Health, Health Visitors Examination Certificate

Practical Training. The practical training will be on a whole-time basis and the local authorities undertaking the training must be able to provide a sufficiently comprehensive field of practical work for the students. It is realised that all local authorities will not be able to provide practical training over the whole field, but such local authorities should be able to arrange for the completion of a student's practical training by co-operating with neighbouring authorities.

Local authorities desirous of training student public health inspectors must be of adequate size and employ a Chief or Senior Public Health Inspector. The ratio of students to Public Health Inspectors is under review.

Students contemplating undertaking practical training with a local authority must, prior to commencing the practical training, apply to the Board for approval of such training. Form EB3 must be obtained from the Board for submission of this information. Form EB3 should be completed and signed by the Medical Officer of Health or the Chief or Senior Public Health Inspector of the local authority concerned or, in the case of a 'sandwich' course, by the Principal of the Technical College concerned.

It is hoped to publish a list of the local authorities able to undertake the training of student public health inspectors in the examination regulations.

Whilst the Board does not propose to prescribe a complete syllabus of subjects for the practical training, such training should be correlated with the students' theoretical instruction and should include the following:

Housing

Inspection under the Public Health Act and the Housing Acts and supervision of repairs, etc.
Clearance areas
Redevelopment areas
Modern housing schemes

Common Lodging Houses—Houses Let in Lodgings

Inspections of a wide range and enforcement of bylaws

Tents, Vans and Sheds

Caravan sites

Inspections, etc.

Canal Boats

Inspections, etc.

Building Construction

Inspections of various types of buildings in course of erection or alteration

Interpretation of plans

Drainage and Plumbing

Examination of and testing of drains and fittings

Inspection of new drainage schemes in course of construction

Repairs to existing schemes

Subsoil drainage

Water Supplies

Control of sources, collection, storage, treatment, distribution

Sewage Disposal

Control of small installations, domestic plants, cesspools, etc. Investigation of pollution of rivers and streams, including control of trade effluents

Conservancy System

Methods of storing and disposal

Refuse Collection and Disposal

Control and supervision

Nuisances

Investigations, abatement, prevention

Offensive Trades

Control, inspections

Smoke Abatement

As applied to industrial undertakings and domestic buildings

Inspections of steam raising and heating plant, etc.

Methods of stoking, etc.

Observations and records

Food Inspection

Duties and procedure in relation to the detection of unsound food

Practical meat and fish inspection

Inspection of all meat products

Standards of construction and hygiene of slaughterhouses

Control of milk and milk products

Actual supervision and instruction in the operation of milk processing plants

Checking of instruments and efficiency factors

Inspection of food preparation premises, etc., cafes, cooked meat shops, ice-cream premises

Sampling

- Food
- Milk
- Water
- Rag Flock

Food Poisoning and Infectious Diseases

- Investigation methods. Practice in model inquiries
- Mock outbreaks
- Disinfection procedure

Shops

- Health and comfort provisions of the Shops Act, with particular reference to heating, lighting and ventilation

Factories

- With particular reference to sanitary accommodation

Port Health Duties

- With particular reference to hygiene of crews quarters, food inspection, and rodent control

Pest Control

- Domestic premises
- Business premises
- Tips, etc.
- Sewer treatments
- Insect pests

Office Routine

- Notices and specifications
- Essential records and registers
- Vital statistics
- Reports to Committees, etc.

Court Procedure, etc.

- Preparation of briefs, laying of information of summons, giving evidence
- Visits to Court of Summary Jurisdiction, etc.

It is not considered practicable to specify the minimum time which should be devoted to practical work under all the foregoing headings. Generally, the time devoted to a subject should be commensurate with its importance in the work of the public health inspector, and should be sufficient to enable the student to become familiar with the practical problems involved. In the case of practical meat inspection, however, candidates should spend substantial periods totalling at least 3 months whole-time at approved slaughterhouses, not less than one-third of this period to be in the last year of the training. In addition, there should be at least 10 practical demonstrations associated with the theoretical course in the inspection of meat and meat products, including canned meat, poultry, and imported meat and offal. The demonstrations should be conducted by the teacher of meat inspection.

Theoretical Instruction. The theoretical instruction will be on the basis of part-time day release embodying a minimum of $6\frac{1}{2}$ hours theoretical instruction a week for 36 weeks in each of the first 3 years and for 32 weeks in the fourth year (excluding examinations) giving a minimum total of 910 hours, or an approved equivalent arrangement.

An outline syllabus for the course is contained in Appended Paper "A", and the allocation of time to be devoted to the theoretical instruction is set out in Appended Paper "B". The training should, wherever possible, include tutorials.

The subject of atomic energy and ionising radiations in relation to public health has been included in the new syllabus. Specific periods have not, however, been allocated to this subject in the sessional time-tables, (Appended Paper "B"). The equivalent of about two days' teaching time should be devoted to the subjects outlined in the syllabus. In some Colleges it may be found convenient to include atomic energy subject matter in the various courses during the four-year training period, e.g. physical and biological principles during the first year; public cleansing, second year; sewage disposal, third year, etc. In other Colleges it may be found more convenient to arrange a concentrated course on atomic energy subjects in the fourth year. However the course is arranged it should, whenever possible, include practical work and visits to atomic establishments and factories where special radiation hazards exist, and have due regard for the special requirements of the public health inspector.

On the basis that the minimum annual demand for qualified public health inspectors will be in the region of 200, and allowing for wastage, places for about 250 students will be required each year. It is considered that each course should consist of 10 to 20 students and that the optimum number of students per course would be 15.

It is, therefore, reasonable to assume that between 20 and 25 courses might be required. The Colleges providing the theoretical instruction must have local facilities for practical training, constitute a reasonable coverage of the country and be geographically accessible to students, having regard to public transport. The authorities of the courses, which are likely to be held in Regional Colleges, will be responsible for arranging, in co-operation with local authorities, visits to public health laboratories, Courts, etc., in connection with the theoretical instruction. Such visits should be arranged as part of the students' practical training under the local authority; the authorities of the course and the local authority co-operating so that the visits occur at the appropriate times in relation to the theoretical instruction.

It is considered that the following might be geographically suitable places for the theoretical courses; the Regional Advisory Councils for Further Education in England, Wales, and Northern Ireland have been asked for their observations on the proposed location of the courses:

Belfast	Newcastle upon Tyne
Birmingham	Norwich
Bradford	Nottingham
Bristol	Oxford
Cardiff	Plymouth
Hull	Portsmouth
Leeds	Preston
Liverpool	Salford
London – Lewisham	Sheffield
London – Tottenham	Stoke-on-Trent
Middlesbrough	

The Board regard the above list of theoretical training centres as a minimum coverage only and would favourably consider the establishment of additional centres, if applications were approved by the Regional Advisory Councils for Further Education.

Examinations. Examinations will be held during the four-years training as follows:

- (1) A First Examination at the end of the first year of training;
- (2) An Intermediate Examination at the end of the second year of training;
- (3) A College Sessional Examination at the end of the third year of training; and
- (4) A Final Examination at the end of the fourth year of training.

The First Examination will be a College examination with the question papers set by and marked by the College staff. The candidates' marked answers will be assessed by the Board. The College authorities will determine from the results of the examination whether or not a student should be admitted to the second year of the course.

The Intermediate Examination will consist of two written papers, the questions for which will be set by the Board and marked by the College staff, and a short practical test at which an assessor from the Board would be present. It will be conducted by the Colleges and the candidates marked answers will be assessed by the Board who will determine from the results of the examination whether or not a student should be admitted to the third year of the course.

The Third Year Sessional Examination will be held by the Colleges, with the question papers set and marked by the College Staff. The candidates' marked answers will be assessed by the Board.

The Final Examination will include four written papers set by the Board on the following subjects:

- | | |
|--------------|--|
| First Paper | .. Environmental Hygiene. |
| Second Paper | .. Housing. |
| Third Paper | .. Meat and Meat Products. |
| Fourth Paper | .. Food Other Than Meat and Meat Products. |

There will also be:

- A practical inspection (environmental) and report;
- A practical inspection (food) and
- An oral examination.

The written examinations will be held simultaneously in the Colleges and the candidates' answers marked by the College staffs in accordance with the Board's scheme. The marked answers will be assessed by the Board's examiners at the oral examination centres.

The oral and practical tests in the Final Examination will be conducted by the Board in selected centres. In addition to details of a candidate's performance at the Final Examination the Board will require reports from the Colleges on each candidate's performance during terms and at the First, Intermediate, and the Sessional Examinations. The decision as to whether a candidate should be awarded the Public Health Inspectors Diploma would be taken after a review of the candidate's work throughout the four years of training.

College Examiners. The College Examiners should be members of the teaching staffs of the colleges undertaking the theoretical instruction. Examiners in this class should be recommended by the Principals of the Colleges and would be appointed by the Board to act at a specified examination or examinations in their own Colleges.

College Examiners would mark the candidates' written answers in accordance with the Board's scheme and conduct the practical tests at the Intermediate Examination and in each case assess the candidates' work thereon in accordance with the Board's scheme.

For each examination in which the staff of a College take part, the Principal of the College concerned should name one College Examiner as Local Secretary to the College Examiners. It would be the duty of the Local Secretary to prepare the marks sheet recording the results of each part of the examination conducted by the College and for examinations other than the Final Examination, to record the decisions of the College Examiners on each candidate in the form required by the Board. It would also be the duty of the Local Secretary to send the completed marks sheet, and other relevant documents, to the Board in accordance with their scheme.

A fee of seven shillings and sixpence per script, or one shilling and sixpence per answer, will be paid by the Board to College Examiners for marking the candidates answers at the Intermediate and Final Examinations. The sum so paid to be apportioned by the Local Secretary among the College Examiners in proportion to the number of answers each has marked.

Examination Syllabus and Regulations. A precis of the syllabus will be included in the examination regulations booklet to be prepared for issue to students by the Board.

P. ARTHUR WELLS,
Secretary of the Board

APPENDED PAPER "A"

THE PUBLIC HEALTH INSPECTORS EDUCATION BOARD

OUTLINE SYLLABUS FOR THE FOUR-YEARS THEORETICAL COURSE

First Year

Basic Science as Applied to Public Health—Physics and Chemistry
Basic Science as Applied to Public Health—Biology, Microbiology
and Principles of Control of Infectious Diseases
Statistical Methods including Applied Mathematics
Principles of Public Health Law and Administration (including
Historical Aspects); Sources of Information and Official Reports;
Report Writing
Building Science
Building Technology and Construction
Technical Drawing, including Preparation and Interpretation of
Plans

Second Year

Building Construction and Science
Food. Hygiene and Inspection
Infectious Diseases Control
Applied Pestology and Parasitology including Vermin and Pest Control
Housing—Physical Aspects of Housing Making for Unfitness and Dilapidations
Public Cleansing
Vital Statistics and Report Preparation
Water Supply

Third Year

Drainage, Sewerage and Sewage Disposal
Food. Hygiene and Inspection
Housing Policy and Procedures under the Housing Act
Inspections, Administration, Office Routine and Organization, including the Principles and Methods of Health Education. The Personnel of the Health Team
Specifications and Estimates in Relation to Repairs and Dilapidations
Hygiene of Buildings; Standards of Heating, Lighting and Ventilation

Fourth Year

Atmospheric Pollution and Smoke Abatement
Food. Hygiene and Inspection
General Survey of Public Health Law with Particular Reference to its Application to Case Law
Housing Policy and Procedures under the Housing Act
Hygiene of Buildings, etc.
Inspections, Administration, Office Routine and Organization including the Principles and Methods of Health Education. The Personnel of the Health Team.
Atomic Energy and Ionising Radiations in Relation to Public Health

THE PUBLIC HEALTH INSPECTORS EDUCATION BOARD
ALLOCATION OF TIME TO THEORETICAL INSTRUCTION

<i>Subjects—First Year</i>	<i>Term I (12 Weeks) Hours</i>	<i>Term II (12 Weeks) Hours</i>	<i>Term III (12 Weeks) Hours</i>	<i>Total (36 Weeks) Hours</i>
Basic Science as Applied to Public Health—Physics and Chemistry ..	39	—	—	39
Basic Science as Applied to Public Health—Biology, Microbiology and Principles of Control of Infectious Diseases	—	13	26*	39
Statistical Methods including Applied Mathematics	—	—	13	13
Principles of Public Health Law and Administration (including Historical Aspects); Sources of Information and Official Reports; Report Writing ..	13	13	13	39
Building Science	—	26	—	26
Building Technology and Construction	—	26	26	52
Technical Drawing, including Preparation and Interpretation of Plans	26	—	—	26
TOTALS	78	78	78	234

*Including elementary microbiology and the principles of the control of infectious diseases.

<i>Subjects—Second Year</i>	<i>Term I (12 Weeks) Hours</i>	<i>Term II (12 Weeks) Hours</i>	<i>Term III (12 Weeks) Hours</i>	<i>Total (36 Weeks) Hours</i>
Building Construction and Science ..	26	26	26	78
Food. Hygiene and Inspection ..	13	13	13	39
Infectious Diseases Control ..	13	13	—	26
Applied Pestology and Parasitology including Vermin and Pest Control	—	13	13	26
Housing—Physical Aspects of Housing Making for Unfitness and Dilapidations	—	—	13	13
Public Cleansing	—	13	13	26
Vital Statistics and Report Preparation	13	—	—	13
Water Supply	13	—	—	13
TOTALS	78	78	78	234

<i>Subjects—Third Year</i>	<i>Term I (12 Weeks) Hours</i>	<i>Term II (12 Weeks) Hours</i>	<i>Term III (12 Weeks) Hours</i>	<i>Total (36 Weeks) Hours</i>
Drainage, Sewerage, and Sewage Disposal	26	26	—	52
Food. Hygiene and Inspection ..	26	26	26	78
Housing Policy and Procedures Under the Housing Act	13	13	13	39
Inspections, Administration, Office Routine and Organization, including the Principles and Methods of Health Education. The Personnel of the Health Team	—	13	13	26
Specifications and Estimates in Relation to Repairs and Dilapidations	13	—	—	13
Hygiene of Buildings: Standards of Heating, Lighting and Ventilation	—	—	26	26
TOTALS	78	78	78	234

<i>Subjects—Fourth Year</i>	<i>Term I (12 Weeks) Hours</i>	<i>Term II (12 Weeks) Hours</i>	<i>Term III (8 Weeks) Hours</i>	<i>Total (32 Weeks) Hours</i>
Atmospheric Pollution and Smoke Abatement	19	19	—	38
Food. Hygiene and Inspection ..	26	26	18	70
General Survey of Public Health Law with Particular Reference to its application to Case Law ..	10	10	10	30
Housing Policy and Procedures Under the Housing Act	10	10	10	30
Hygiene of Buildings, etc. ..	13	13	—	26
Inspections, Administration, Office Routine and Organization, including the Principles, and Methods of Health Education. The Personnel of the Health Team	—	—	14	14
TOTALS	78	78	52	208

Note—Atomic Energy and Ionizing Radiations in Relation to Public Health.

It has not been thought desirable to allocate atomic energy and radiation subjects throughout the syllabus. It is recommended that the equivalent of about two days' teaching time should be devoted to the subjects outlined in the syllabus. In some colleges it may be found convenient to include atomic energy subject matter in the various courses

during the four years training period, e.g. physical and biological principles during the first year; public cleansing, second year; sewage disposal, third year, etc. In other colleges it may be found more convenient to arrange a concentrated course on atomic energy subjects in the fourth year.

However the course is arranged, it should whenever possible include practical work and visits to atomic establishments and factories where special radiation hazards exist, and have due regard for the special requirements of the public health inspector.

APPENDIX IX

CENTRAL TRAINING SCHEME FOR INSPECTORS

Syllabus

1. General Background

Methods of production and standards of living – relation between industrialisation, urbanisation, and health – Department of Public Health Service and Industrial Health Service. *Department of Health* – State responsibility – social role of the Inspector – social security – International Health Organisations – UNO.

2. Study of Social Health

Collection, analysis, and presentation of information – statistical methods – census, death rate, birth rate, infant mortality rate, occupational death rates, and morbidity rates.

Environment and heredity (nature or nurture). Main factors – production methods. Buying power (wages), nutrition, housing, sanitation, town planning, epidemics, personal hygiene, mental hygiene, working conditions.

Individual and group influence.

3. Industrial Relations

Structure of industry – handicraft production, feudalism, capitalism, socialism.

Organisation of employers – conflicting tendencies – monopolies.

Workers' organisation – history of trade unions – compulsory trade unionism – closed shop – shop stewards' movement.

Joint worker-employer organisations – works committees, works councils, methods of consultation.

Statutory wage-fixing authorities – Court of Arbitration.

Strikes and lockouts – methods of settling disputes.

Department of Labour.

4. Chemistry

Physical and chemical changes, elements, compounds, and mixtures, air and combustion, composition of air by volume and by weight. Water and hydrogen.

Solutions and crystallisation.

Physical properties of gases, diffusion and liquefaction.

Laws of chemical combination by weight.

The atomic theory, valency and atomic weights.
Formulae and equations.
Chemical reactions between gases and Avogadro's law.
Molecular weights and the determination of the formulae of substances.
Hydrogen.
Oxygen and oxides.
Catalysis and chemical change, reversible reactions.
Acids, bases and salts, classification of oxides.
Ozone and hydrogen peroxide.
Oxidation and reduction.
Sulphur sulphides, hydrogen sulphide, sulphur dioxide, sulphur trioxide, sulphuric acid.
Nitrogen and ammonia, oxides of nitrogen, nitric acid and nitrates, nitrogen and the world's food supply.
Common salt and hydrochloric acid.
Chlorine.
Carbon, carbon dioxide, carbonates, carbon monoxide.
Silicon, silica, and silicates.
Sodium and potassium.
Calcium. Hardness of water.
Magnesium, zinc, copper, lead, iron, steel.

Organic Chemistry

Methane, ethane, and chlorinated derivatives, ethylene, acetylene, methyl, and ethyl alcohols, acetaldehyde, formic, acetic, and oxalic acids, ethyl acetate, fats and soaps, urea.

5. Physics

Elementary physics to give students a knowledge of principles rather than of details.

Measurements: Measurement of length, area, volume, mass weight, and density.

Characters of Liquids: Surface tension, capillarity, communicating vessels, measurement of pressure, fluid pressure, Archimedes Principle, specific gravity of liquids and solids, hydrometer.

Characters of Gases: Atmospheric pressure, barometers, Boyle's Law, siphon, common pumps.

Motion: Velocities, acceleration, momentum force, inertia, Newton's three laws, parallelogram, triangle and polygon of forces.

Mechanics: Work, energy, power, levers, law of moments, centre of gravity, inclined plane, screw, pulleys.

Heat: Change of size, thermometers, conversion of scales, recording thermometers, maximum and minimum thermometers, expansion of solids, liquids, and gases. Hope's apparatus. Charles's Law, relation between Boyle's and Charles's Laws, latent heat of vaporisation, fusion and solidification, boiling, vapour pressure, relative humidity, hygrometers, conduction, convection, and radiation.

Light: Propagation of light, shadows, reflection at plane surfaces, refraction at plane surfaces, units of illumination, inverse square law, illumination meters.

Sound: Production and propagation, reflection, velocity, resonance, timbre, pitch, loudness.

Static Electricity: Electric charges, electroscope, insulators, and conductors, lines of force, condensers.

Magnetism: Properties of magnets, magnetic substances, earth's magnetism, magnetic fields, lines of force.

Electricity: Dry cells and lead accumulator, E.M.F., magnetic, chemical, and heating effect of an electric current, resistances, Ohm's Law, power, behaviour of an electric current in a magnetic field, electric motors, electromagnetic induction. a.c. and d.c. dynamos, induction coil, transformers, elementary knowledge of discharge through gases, of X-rays and of radioactivity.

6. Infectious and Notifiable Diseases and Their Prevention

Nature of infection. Bacteria – nature, multiplication.

Incubation period. Resistance factors – nutrition, fatigue.

Sources and modes of spread of infection.

Preventive measures against infection and infectious diseases.

Notification of infectious disease. Control of infected persons, premises, and articles. Carriers of disease.

Natural and acquired immunity. Inoculation, vaccination.

International control of infectious disease. Quarantine (sea and air).

Common infectious diseases of childhood. Tuberculosis.

Scabies. Tetanus. Hydatid disease and general parasitology.

Investigation of outbreaks of infectious disease: Enteric fevers, dysentery, food poisoning, diphtheria, streptococcal sore throats. Principles of disinfection:

Current and terminal disinfection; apparatus, steam disinfection, dry heat, chemical disinfectants, gaseous disinfectants, physical agents. Fumigation of ships and buildings.

Health Act and regulations in respect of infectious and notifiable diseases.

7. Building Construction

Requirements of building sites – zoning and density of buildings – cubic space per person – setting out houses including use of dumpy level – layout of factories.

Building materials – timber, stone, brick, cement, mortar, pumice, earth, etc.

Foundations, floors, walls, roofs, partitions, doors, windows, staircases, fireplaces.

Damp-proofing of timber and concrete structures, including basements; vermin-proofing.

Methods of timber construction.

Paving.

Regulations and bylaws.

8. Drawing

Building geometry – drawing and interpretation of plans – sketching of fittings, drains, necessary repairs, etc.

9. Plumbing and Drainage

Plumbing and drainage schemes and principles – materials used – drains under buildings – connections to mains – access and inspection – efficiency tests – intercepting traps – ventilation of drains – rainwater pipes.

Types of water closet, urinals, basins, baths, and sinks.

Joints and fittings. Ranges and tiers of fittings.

Regulations and bylaws.

10. Sewage and Stormwater Disposal

Sewerage schemes – septic tanks – subsoil drainage – disposal and purification – standards of effluents – regulations and bylaws.

11. Collection and Disposal of Refuse

Conservancy systems. Bored-hole latrines; chemical closets, nightsoil collection and disposal. Systems for dealing with trade, house, and other refuse. Storage. Garchey system. Composition of refuse. Estimation of amount. Collection. Transport. Disposal methods. Controlled tipping. Incineration. Salvage. Screening. Pulverisation. Costs. Burial of refuse in soil. Nitrogen cycle. Regulations and bylaws.

12. Control of Nuisances

Privies. Keeping of animals. Overcrowding. Accumulation of rubbish.

Pollution of rivers and streams.

Life history of flies, mosquitoes; preventive measure.

Fly-proofing privies and food stores.

Fleas, lice, bedbugs, cockroaches, and their eradication.

Insecticides – rats and mice – trapping, poisoning, and fumigation.

Ants.

Noise in industry.

Composition of smokes – household smoke, dangerous industrial smokes.

Sewer gases.

Smells. Dusts. Dangerous industrial dusts.

Disposal of dead bodies.

Provision of Health Act and bylaws.

13. Offensive Trades Under the Health Act

14. Industrial Health Hazards and Their Prevention

Dust diseases – silicosis, asbestosis, bronchitis and catarrh. Dust control in industry.

Skin conditions – occupational dermatitis, occupational skin cancers.

Protection of the eyes in industry – eyestrain and lighting; heat and ultra-violet radiation; foreign body protection.

Poisoning from lead, arsenic, zinc oxide fumes, carbon bisulphide, carbon monoxide, hydrogen sulphide, etc.

Solvent fumes.

Protective clothing.

Industrial deafness.

Fatigue – seating – lifting – salt and water loss.

Young persons. Women.

Legislation under Factories Act.

15. Safety at Work

Causes of accidents in factories and homes. Safety education. Training of the young.

Machine guarding – special reference to wood-working machinery. Scaffolding.

Fire hazards and their control.

Provision of first aid. Artificial respiration.

Legislation under the Factories Act and Scaffolding and Excavation Act.

16. Control of the Working and Living Environment

Ventilation – heating – lighting.

Factory housekeeping.

W.C. and cloakroom standards.

Factories amenities and welfare organisation.

Factories Act.

17. Water

Physical and chemical characteristics of drinking water. Requirements per head. Sources of supply. Wells. Water storage and distribution. Suitability of materials. Elementary hydraulics. Pumps and hydraulic rams. Cisterns and tanks. Pollution of water during collection, storage, and distribution and its prevention. Pollution of rivers, lakes, wells. Sources and dangers of pollution. Water-borne diseases. Purification of water. Filtration. Rapid and sand filters. Domestic filters. Chlorination. Hardness in water. Water softening. Water sampling. Purification of water of swimming baths. Detergents.

18. Food and Food Premises

Composition of foods; food values; nutrition; protective foods; inspection of food. Characteristics of good and bad food (fish, vegetables, and fruit). Milk and milk products; milk carts; pasteurisation and treatment houses; milk sampling. Food in relation to infectious and other diseases. Preservation of food. Use of preservatives. Canned foods. Inspection of canned foods. Recognition and inspection of carcasses, joints, and organs of animals used for human consumption. Diseases of animals intended for food. Characteristics of diseased meat. Handling of meat in abattoirs, during transport, and in the shop. Butchers' shops. Game, poultry, and fish. Law regarding seizure of meat and other unsound foods. Handling and transport of shellfish. Sampling of foods. Labelling of foods.

Control of food premises – control and supervision of eating houses.

Factory and office canteens and cafeterias. Instruction of food handlers. Processing of food in factories, retail sale, sampling. Bakehouses, handling and transport of bread.

Regulations and bylaws under Health Act and Food and Drugs Act.

19. Inspection Procedures

Inspection of dwelling houses, factories, ships, theatres, halls, public conveniences, licensed premises, camping grounds.

Preparation of reports. Record keeping. Serving of requisitions.

Legal enforcement of Acts and regulations. Collection of evidence.

Requirements of a good witness.

20. Office Routine

General office routine. Filing and keeping of records. Preparation of reports.

21. Statutes and Regulations

Health Act 1956. Housing Improvement Act 1945. Municipal Corporations Act 1954. Plumbers Registration Act 1953. Counties Act 1956. Food and Drugs Act 1947. Factories Act 1946. Poisons Act 1960. Cemeteries Act 1908. Shops and Offices Act 1955. Agricultural Workers Act. Shearers' Accommodation Act. Scaffolding and Excavations Act. Regulations and bylaws made under these Acts.

22. Social Psychology

Personality types – temperamental factors and job adjustment – incentives – supervision and leadership – morale – psychological factors in labour turnover – what psychology is about – study habits heredity and environment – social classes in New Zealand – how we learn – intelligence and abilities – feelings and emotions – psychological conflict – psychotherapy – technique of interviewing – incentives – leadership.

23. Health Education

Education and propaganda. Tuition in use of sound projector – care of films.

24. Dairy Technology at Massey College

Definition – composition of milk – theory of milk secretion – elementary dairy bacteriology – composition and yield of cheese, cream, and butter – clean milk production – sampling equipment and methods – sterilising and aseptic precautions – milk cooling by water and refrigeration – animal diseases – abnormal milk flavours and odours – dairy regulations – types and care of milking machines – separators – pasteurisation – homogenisers – can washing, bottle washing – milk containers – ice-cream manufacture – laboratory tests.

APPENDIX X

REGULATIONS AND SYLLABUS FOR THE EXAMINATION FOR THE DIPLOMA QUALIFYING FOR APPOINTMENT AS PUBLIC HEALTH INSPECTOR IN ENGLAND AND WALES

REGULATIONS

1. AGE. No candidate will be admitted to the Final Examination who has not attained the age of 21 years on the first day of the examination.

2. PRELIMINARY EDUCATION. Every candidate must produce evidence (Certificate A) of having passed an examination of G.C.E. "O" level standard in at least four subjects, including one subject from each of the following four groups, namely:—

(a) English Language.

(b) Mathematics, or Additional Mathematics, or Pure Mathematics, or Applied Mathematics, or Mechanics, or Technical Drawing.

- (c) Physics, or Chemistry, or General Science, or Chemistry with Physics, or Biology, or Building Science, or Engineering Science.
- (d) An optional subject, which may be selected, if desired, from (b) or (c).

Passes in the above specified subjects at the following examinations will be also accepted as evidence of the required preliminary education:

Army First Class Certificate of Education

Engineering Joint Examination Board Common Preliminary Examination

General Certificates of Education issued by the

Associated Examining Board

Cambridge University Local Examinations Syndicate

Northern Universities Joint Matriculation Board

Oxford and Cambridge Schools Examination Board

Oxford Delegacy of Local Examinations

University of Bristol

University of Durham

University of London

Welsh Joint Education Committee

Irish Department of Education Secondary School Leaving Certificate Examination
Matriculation Examination (and all examinations accepted in lieu thereof) of any
University in the British Commonwealth

Northern Ireland Ministry of Education Senior Certificate Examination

Preliminary Examination of the

Chartered Auctioneers' and Estate Agents' Institute

Chartered Insurance Institute

Conjoint Board of Ireland of the Royal College of Physicians and the Royal
College of Surgeons

Institute of Chartered Accountants in England and Wales

Law Society

Royal Institution of Chartered Surveyors

Royal Navy Higher Educational Test (provided passes have been obtained in two
science subjects)

Scottish Leaving Certificate Examination (at lower or higher grade)

Passes in the following examinations as specified in each case below:

Scottish Certificate of Education Examination with passes in the ordinary grade in

- (i) English, and
- (ii) Mathematics or Applied Mathematics or Technical Drawing or Building Drawing, and
- (iii) Physics or Chemistry or Biology or Zoology, and
- (iv) An optional subject, which may be selected, if desired, from (ii) or (iii).

College of Preceptors Senior Certificate Examination with passes at credit level in

- (i) English Language, and
- (ii) Mathematics I or Mathematics II or Technical Drawing, and
- (iii) Physics or Chemistry or Biology or Physiology and Hygiene, and
- (iv) An optional subject, which may be selected, if desired, from (ii) or (iii).

In addition, the following certificates will also be recognised as evidence of preliminary education:

Board of Trade Certificate of Competency as

Master, or

First Mate of a foreign-going ship, or

First Class Engineer

National Diploma in Building

Higher National Certificate in Building

Ordinary National Certificate in Building

Royal Society of Health, Health Visitor Examination Certificate

3. THEORETICAL INSTRUCTION. Every candidate must produce evidence (Certificate B) of having regularly attended a four-years course of lectures and demonstrations approved by the Board. The theoretical instruction will be on the basis of part-time day release or an approved equivalent arrangement. Candidates must attend the whole of the course and in its proper sequence. A list of the Colleges where such courses have been approved and from which details can be obtained is attached.

4. PRACTICAL TRAINING. Every candidate must produce evidence of having undergone a four-years course of full-time approved, practical training under a system of paid pupillage with a local authority in the work and duties of a Public Health Inspector.

5. Applications for the Final Examination must be made on the proper form (EB2A) and must be sent so as to reach the Secretary of the Board not later than 56 days before the first day of the written part of the Final Examination at which the candidate desires to sit. Applications received later will not be accepted.

6. The fee for the Intermediate Examination is 10 guineas and for the Final Examination 20 guineas. The fee for re-entry to the Intermediate Examination is 7 guineas and to the Final Examination 13 guineas.

Each examination fee must be sent to the Board with the appropriate examination application form. Cheques should be made payable to the P.H.I.E. Board.

7. A candidate prevented from attending by illness or other cause considered sufficient by the Board may be admitted to a subsequent examination without further fee.

8. The Board reserve the right to vary or modify any of the preceding regulations as they may see fit.

SYLLABUS OF SUBJECTS

First Year

Basic Science as Applied to Public Health—Physics and Chemistry
Basic Science as Applied to Public Health—Biology, Microbiology, and
Principles of Control of Infectious Diseases
Statistical Methods including Applied Mathematics
Principles of Public Health Law and Administration (including historical
aspects); Sources of Information and Official Reports; Report Writing
Building Science
Building Technology and Construction
Technical Drawing, including Preparation and Interpretation of Plans

Second Year

Building Construction and Science
Food. Hygiene and Inspection
Infectious Diseases Control
Applied Pestology and Parasitology including Vermin and Pest Control
Housing—Physical Aspects of Housing Making for Unfitness and
Dilapidations
Public Cleansing
Vital Statistics and Report Preparation
Water Supply

Third Year

Drainage, Sewerage and Sewage Disposal
Food. Hygiene and Inspection
Housing Policy and Procedures under the Housing Act
Inspections, Administration, Office Routine and Organization, including the Principles and Methods of Health Education. The Personnel of the Health Team.
Specifications and Estimates in Relation to Repairs and Dilapidations
Hygiene of Buildings: Standards of Heating, Lighting and Ventilation

Fourth Year

Atmospheric Pollution and Smoke Abatement
Food. Hygiene and Inspection
General Survey of Public Health Law with Particular Reference to its Application to Case Law
Housing Policy and Procedures under the Housing Act
Hygiene of Buildings, etc.
Inspections, Administration, Office Routine and Organization including the Principles and Methods of Health Education. The Personnel of the Health Team.
Atomic Energy and Ionizing Radiations in Relation to Public Health.

GENERAL INFORMATION

Students contemplating undertaking practical training with a local authority must, prior to commencing the practical training, apply to the Board for approval of such training. Form EB3 must be obtained from the Board for submission of this information. Form EB3 should be completed and signed by the Medical Officer of Health or the Chief or Senior Public Health Inspector of the local authority concerned, or in the case of a "sandwich" course, by the Principal of the Technical College concerned.

A list of the local authorities undertaking the training of student public health inspectors will be prepared by the Board.

After students have been accepted by a local authority for practical training and by a technical college for theoretical instruction, they must register with the Board as Student Public Health Inspectors. Form EB6 should be obtained from the Board for this purpose. A fee of one guinea is charged for each registration.

Applications for particulars of the courses of theoretical instruction under Regulation 3 and of practical training under Regulation 4 must be addressed to the colleges or authorities concerned and not to the Board.

During the four-years practical training and theoretical instruction there will be the following examinations:

- (i) A First Examination at the end of the first year of training
- (ii) An Intermediate Examination at the end of the second year of training
- (iii) A Third Examination at the end of the third year of training; and
- (iv) A Final Examination at the end of the fourth year of training.

A student's admission to the second and third years of the training will depend upon the results of his First and Intermediate Examinations respectively.

The Final Examination will consist of:—

- First Paper .. Environmental Hygiene
- Second Paper .. Housing
- Third Paper .. Meat and Meat Products
- Fourth Paper .. Food Other than Meat and
Meat Products
- A Practical Inspection (Environmental) and Report
- A Practical Inspection (Food); and
- An Oral Examination.

The written examinations will be held simultaneously in the colleges conducting the theoretical instruction. The practical and oral parts of the Final Examination will be held in selected centres to be announced by the Board.

A list of the centres and dates for the Final Examinations will be supplied on application to the Board.

Entry forms should be submitted as early as possible. An entry may be withdrawn for any reason before the last day for receiving it, or later for unavoidable causes (e.g. illness), without loss of fee.

The last date for the receipt of entry forms is given in the regulations and on each entry form. This regulation will be strictly enforced and *entries arriving after the closing date will in no circumstances be accepted*. Entries should be despatched at least a week before the closing date so that if corrections to them are needed, or they are accidentally delayed, the forms will still arrive in time.

Examination pass lists are posted to candidates and placed on the notice boards at 90 Buckingham Palace Road, London, S.W.1, as soon as copies of the list are available. No information can be given over the telephone or by telegram either to the candidate or to any other person.

A Diploma, bearing the seal of the Board, is granted to each successful candidate at the Final Examination. It will be sent about two months after the examination concerned.

The questions set at previous examinations can be obtained from the Board on forwarding 2s. 6d. for each examination for which questions are desired, provided copies are still available.

APPENDIX XI

New Zealand Examination Board

EXAMINATION FOR THE CERTIFICATE TO QUALIFY FOR APPOINTMENT AS HEALTH INSPECTOR

GENERAL INFORMATION

Candidates for examination are required, before embarking upon any course of training, to familiarise themselves with the provisions set out in these regulations, and to communicate with the Secretary of the Board notifying him of their intention to undergo training and specifying the course of training to be followed. They should obtain the approval of the Board before undertaking any course of training.

The examination will be partly written and partly oral and practical. It will extend over a period not exceeding three days. The usual timetable is as follows but it may be varied if necessary:—

Tuesday: Written papers.

Wednesday: Practical inspection and report.

Thursday: Oral examination.

The questions set at previous examinations can be obtained from the Secretary on forwarding sixpence for each examination for which questions are desired, providing copies are still available. Great importance is attached to practical knowledge such as a candidate should have acquired in the course of his training. A desirably high standard of theoretical knowledge cannot compensate for any failure to satisfy the examiners in respect of thorough practical familiarity with the work and duties of a health inspector.

Candidates proposing to qualify themselves with a view to appointment by local authorities or Government Department are advised to satisfy themselves that their age, health and physical condition are such that they are likely to be able to comply with medical requirements more particularly where superannuation schemes are in operation.

REGULATIONS FOR ADMISSION

1.—Application for examination must be made on the proper form and must be sent to the Secretary of the Board not later than the 15th March. The fee for examination is £8 8s. It must be sent with the application form.

A candidate prevented from attending by illness, and producing a medical certificate to that effect, or other cause considered sufficient by the Board, may be admitted to a subsequent examination without further fee.

2. Age

No candidate will be admitted to the examination who has not attained the age of 21 years on the first day of the examination.

3. Preliminary Education

Every candidate shall, before being allowed to sit for the examination, produce evidence of having passed the School Certificate Examination of the Education Department of New Zealand, or of possessing some higher qualification, and in any case of having had tuition in elementary chemistry and physics.

4. Courses of Training

Every candidate before sitting the examination shall produce evidence of having attended an approved full time course of lectures and practical demonstrations of one academic year at a Technical School or approved Institute. Such a course of lectures and practical demonstrations shall include all the subjects set out in the syllabus.

Provided that in an exceptional case when a candidate can satisfy the Board that he is unable to attend the full time course, he may be accepted on the following conditions:

The candidate shall, before sitting the examination, produce evidence that he has completed an approved course of part time instruction, of at least three years' duration, in all the subjects set out in the syllabus (including instruction and practical demonstrations in physics and chemistry).

Exemption: At the discretion of the Board any candidate who can produce evidence of having received satisfactory instruction and practical demonstrations in physics and chemistry may be exempted by the Board from attending that portion of any course of instruction dealing with these subjects.

5. Practical Training

Every candidate must produce evidence of having undergone practical training in all branches of the work and duties of a Health Inspector. Such evidence shall consist of the following:—

A certificate as shown in Form A in the Schedule hereto, together with:

- (a) A certificate of having held for at least six months, the office of Trainee Inspector under the Department of Health or a Local Authority approved by the Board; or
- (b) A certificate of having worked under the supervision of a Health Inspector approved by the Board, and having obtained practical training of not less than 480 working hours. Such practical training must be completed during the final year of the three year course; or
- (c) A certificate (signed by his employer) of having had practical experience during a period of at least three years, as a tradesman in plumbing or other approved building craft, and also a certificate of having worked under the supervision of a Health Inspector approved by the Board, and obtained practical training of not less than three hundred (300) working hours. Such practical training must be completed during the final year of the three year course.

6. An unsuccessful candidate may be called upon to produce evidence of having undergone further instruction or training before being admitted to re-examination.

SYLLABUS OF SUBJECTS

1. *Chemistry and Physics:* As applied Public Health.

2. *Statutes and Orders:* The provisions of the Acts, Regulations and Model Bylaws relating to the duties of Health Inspectors. The principles and practice of administration and enforcement.

3. *Inspection and Administration:* Methods of inspection of buildings, dwellings, hotels, lodging-houses, camps, ships, dairies, milk shops, bake-houses, butchers' shops, food premises, eating houses, bars, workshops, hairdressers' premises, stables, offensive trades, nuisances especially connected with trades and manufactures. The detection and prevention of smoke nuisances and nuisances in general.

4. *Water:* The physical characteristics of drinking water, sources and methods of supply, the various ways in which it may be polluted during collection, storage and distribution, and the means of preventing such pollution; the pollution of rivers, lakes, wells and ponds. Sources and dangers of pollution. Purification of water. Control of public swimming pools.

5. *Food*: Duties of the Inspector in relation to food. The inspection of food. Characteristics of good and bad food (including fish, vegetables and fruit). Milk and milk products; the grading of milk. Food in relation to infectious and other diseases. Inspection, sampling and seizure of food under the Food and Drugs Act and Regulations. The appropriate action to be taken in regard to food unfit for human consumption. Food standards. Cleansing of appliances and equipment. Use of detergents and cleansing agents.

6. *Air, Ventilation, Warming and Lighting*: The composition of air and the various causes of pollution. The principles of ventilation and air conditioning, methods of warming, lighting and ventilating rooms and buildings. Measurement and calculations of areas, cubic space, etc.

7. *Building Construction and Sanitation*: General building construction including sites, foundations, roofs and damp-proofing of structures, the advantages and disadvantages of various sanitary appliances, the inspection of builders' and plumbers' work, the interpretation of drawings and specifications. Preparation of schedules of repairs.

8. *Drainage, Stormwater drainage, Sewerage and Sewage Disposal*: A knowledge of various systems of drainage and their adaptability to particular conditions; construction of drains; levelling and methods of drain testing. Sewage treatment and disposal and stormwater disposal.

9. *Collection and Disposal of Refuse*: Various systems for dealing with trade, domestic and other refuse.

10. *Prevention of Infectious Diseases*: Nature of infection; sources and mode of spread. Incubation period of infectious diseases. Preventive measures against infection and infectious diseases. Disinfection.

11. *Insects, Pests and Vermin*: Their life history and role as disease vectors; preventive measures; destruction. Disinfestation of premises; methods of rodent control.

12. *Disposal of the Dead*: Supervision of cemeteries, crematoria, mortuaries and exhumations.

13. *Port Sanitation*: Duties of a Health Inspector in connection with shipping and aircraft.

14. *Vital Statistics*: The meaning of the terms used. The purpose and methods of calculating birth rate, death rate, rate of infant mortality.

15. *Occupational Health*: Human relationships in industry; occupational health hazards; environmental hygiene, as applied to occupation.

16. *Office Routine*: A knowledge of the functions of an office and methods of keeping records and conducting correspondence. Preparation of reports.

17. *Public Health Aspects of Radiation Hazards*: (A general elementary treatment). Elements of the structure of the atom. Principles of nuclear reactions. Units of radiation and radio-activity. Methods of measuring radio-activity.

SCHEDULE

Form A

To the Hon. Secretary,
Examination Board of Royal Society of Health,
WELLINGTON.

....., a candidate
for the Health Inspector's Certificate Examination, has completed under
my supervision, the inspections listed on the attached schedule approved
by the Board, and I have affixed my initials in the columns alongside the
dates on which each inspection was made.

(signed)

.....
Health Inspector.

APPENDIX XII

New Zealand Examination Board

**DIPLOMA IN HEALTH ENGINEERING
EXAMINATION**

GENERAL INFORMATION

Candidates for examination are required, before embarking upon
any course of training, to familiarise themselves with the provisions set
out in these regulations, and to communicate with the Secretary of the
Board notifying him of their intention to undergo training and specifying
the course of training to be followed. They should obtain the approval of
the Board before undertaking any courses of training. The examination
will extend over a period of two days and will be partly written and
partly oral.

REGULATIONS FOR ADMISSION

1. Application for examination must be made on the proper form
and must be sent to the Secretary of the Board not later than the 15th
March.

The fee for examination is £5 5s. per part, or £8 8s. if the Examina-
tion is taken all at one sitting.

A candidate prevented from attending by illness and producing a
medical certificate to that effect, or other cause considered sufficient by
the Board, may be admitted to a subsequent examination without further
fee.

2. Age

No candidate will be admitted to the examination who has not attained
the age of 21 years on the first day of the examination.

3. Preliminary Education

Every candidate, subject to the exemption clause, must produce evidence of having passed one or other of the following examinations:

School Certificate examination, including chemistry and physics.

Engineer's Preliminary examination.

University Entrance examination.

Exemption: This preliminary educational standard may in exceptional circumstances be relaxed at the discretion of the Board where the Board is satisfied that the previous knowledge and experience of the candidate warrant such exemption.

4. Theoretical Training

Every candidate before sitting for the examination shall produce evidence of having attended a course of lectures and practical demonstrations, of two years' duration, approved by the Board. Such course of lectures and practical demonstrations shall include all the subjects set out by the Board.

5. Practical Training

It is essential that candidates should have a practical, as well as a theoretical knowledge of the subjects set out in the syllabus. They are required to make visits of inspection to all of the following:

Waterworks, reservoirs, filtration and chlorination plants, water softening plants.

Public and domestic buildings in all stages of their construction.

Systems of heating, lighting and ventilation of public buildings, hospitals, schools, factories, laundries, baths and wash-houses.

Sewer construction and sewage purification and disposal works.

Refuse disposal works, disinfecting plants.

Road construction.

The inspections should be of such a character as to enable candidates to get a clear and thorough understanding of the principles of working and construction of materials, appliances, apparatus and workmanship, and of the scientific and practical principles on which operations and processes are founded.

6. When these visits of practical inspection have been made they must be certified by a responsible officer of a local authority or government department.

7. An unsuccessful candidate may be called upon to produce evidence of having undergone further instruction or training before being admitted to re-examination.

SYLLABUS OF SUBJECTS

PART A

Section I—Report

A written report will be required in respect of a selected health engineering problem of which outline particulars will be provided. Alternatively candidates possessing a General Certificate of Education at Ordinary Level in English Language will be exempt from this section of the examination.

PART A

Section II—Environment

Atmospheric Hygiene and Ventilation

Air: composition; chemical and physical properties; atmospheric pressure; air movements; rainfall; humidity; fogs; meteorological instruments and their uses.

Atmospheric pollution; smoke; sources and causation; composition; measurement of density; effects on buildings and vegetation; smoke recorders; smoke prevention; chimney gases, their nature and composition; grit separation; effect of height of chimneys. Other sources of atmospheric pollution.

Ventilation: principles; the investigation of air conditions in buildings; collection of samples of air; systems of ventilation; air conditioning; the removal of fumes and dusts produced in industry.

HEATING

Heat: sources, production, transmission and measurement; effects on solids, liquids and gases.

Fuels and combustion: solid, liquid and gaseous; apparatus for utilization of each; elementary principles of combustion.

Furnaces and boilers: their design, construction and management; draught, natural and mechanical; methods of production; measurement.

Heating systems: calculation of heat required, heating surfaces and heat losses; natural and forced circulation; inter-relationship of heating and ventilation; domestic hot water systems.

Refrigeration and cooling systems.

LIGHTING

Natural: variation of natural illumination; daylight factor and sky factor; determination of sky factor; recommended minimum factors; importance of penetration and of daylight area; orientation and insolation.

Artificial: measurement of intensity; essentials of good lighting; recommended illumination values; spacing and mounting height of fittings; types and uses of fittings; gas and electric lamps; simple calculation of lamp size to produce a given intensity.

Fenestration.

RADIATION

Elements of fundamental nuclear physics. Structure of the atom. Fundamental particles. Nuclear reactions. Units of radiation and radio-activity.

Radiation biology. Physical and genetic effects of radiation. Biological dosimetry.

Application of nuclear sources of energy. Nuclear reactors and industrial uses. Site selection.

Radiation hazards and protection. Principles of protection (structural and non-structural). Use of instruments. Disposal of radio-active wastes. Decontamination practice.

PART B

Section III—Services

Water and Water Supply – Principles of

Sources of water supply. Physical, chemical and bacteriological properties of water. Causes of pollution during collection, storage and distribution and means of prevention of pollution. Pollution by back syphonage. Filtration, softening and other treatments. Distribution systems. Estimation of demands. Measurement of flows. Domestic plumbing for hot and cold water services. Mains, valves, pumps, hydraulic rams, overflows, washouts, fittings.

Water pressures: formulae for, and calculation of, uniform flow of water in pipes and channels; losses at sudden enlargements and contractions, bends and valves. Hydraulic gradient.

Diseases transmitted by water and preventive measures.

Drainage, Sewerage and Sewage Disposal – Principles of

Drainage systems: selection of materials for, and laying, jointing, fixing and protection of, foul, surface water and combined drains within and without buildings. Detection and rectification of faults and defects in design, materials, workmanship and performance of drainage systems.

Inspection and maintenance of small sewage and surface water lifting plants.

Foul and surface water disposal: inspection and maintenance of small sewage treatment plants, cesspools, outfalls and soakaways; detection and rectification of faults and defects in design, materials, workmanship and performance. Sampling of effluents for analysis and interpretation of results. Inspection and maintenance of conservancy systems. Detection of and precautions against causes of dampness, flooding, nuisance and water supply pollution arising from foul, surface, and subsoil water disposal installations. Petrol and oil interceptors. Disposal of trade effluents.

Sanitary appliances: selection and fitness for purpose; detection of faults and defects in design, materials, fixing and performance.

Waste plumbing: selection of materials for, and fixing, jointing and protection of, soil, waste, ventilating and rainwater pipes and fittings; detection and rectification of faults and defects in design, materials, workmanship and performance; precautions relating to access; temperature changes and noise transmission.

Cleansing Services

Methods and organisation of refuse collection and street cleansing.

Nature of house, street and trade refuse.

Refuse disposal and utilisation; incineration; tipping; pulverising; dumping at sea; salvage and composting.

Prevention of dust, vermin and other nuisances.

PART B

Section IV—Buildings, Administration, Law and Bylaws

Buildings

Building sites: site layout, preparation and development.

Construction: foundations; damp prevention; sound and heat insulation; general principles of building construction.

Building materials: nature; properties, measurement and suitability for special purposes.

The principles of the design and construction of schools, markets, slaughterhouses, cowsheds, dairies, factories, public conveniences and other public, commercial and private buildings considered from the point of view of hygiene and sanitation.

Design and control of swimming baths, cleansing and disinfecting stations, crematoria and laundries.

Administration

The organisation and functions of statutory authorities responsible for control of matters included in this syllabus.

Contracts, specifications, bills of quantities and estimates.

Interpretation of working drawings, and methods of measurement of finished works.

A knowledge of Codes of Practice and New Zealand Standard Specifications.

Laws and Bylaws

The general provisions of all legislation relating to environmental health (e.g., housing, water, domestic and industrial waste disposal, atmospheric pollution) in so far as they relate to environmental health.

Section V—Oral

May include questions on all or any of the sections of this syllabus.

WELLINGTON, 1960.

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Board of Health Report Series includes:

- No. 1 – Psychiatric Services in Public Hospitals in New Zealand (March 1960).
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- No. 4 – Medical Examination of Young Workers in New Zealand (March 1961).
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WELLINGTON, NEW ZEALAND—1963